

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

PRINCE WILLIAM SOUND AREA
ANNUAL FINFISH MANAGEMENT REPORT

1983

Area Management Biologist Richard Randall
Asst. Area Management Biologist Peter Fridgen
Research Project Leader Michael McCurdy
Research Project Leader Kenneth Roberson

Area Office
P. O. Box 669
Cordova, Alaska 99574

March 1983

TABLE OF CONTENTS

| <u>Section</u> | <u>Page</u> |
|------------------------------------|-------------|
| PREFACE..... | i |
| LIST OF TABLES..... | ii |
| LIST OF FIGURES..... | vi |
| LIST OF APPENDICIES..... | viii |
| INTRODUCTION..... | 1 |
| 1983 SEASON SUMMARY | |
| Copper River District..... | 1 |
| Subsistence Fishery..... | 3 |
| Bering River District..... | 4 |
| Coghill & Unakwik District..... | 6 |
| Eshamy District..... | 6 |
| General Purse Seine District..... | 7 |
| Hatcheries..... | 9 |
| 1984 OUTLOOK..... | 10 |
| MISCELLANEOUS..... | 11 |
| HERRING SUMMARY..... | 12 |
| Introduction..... | 12 |
| Sac Roe Seine Fishery..... | 12 |
| Sac Roe Gill Net Fishery..... | 14 |
| Natural Spawn on Kelp Fishery..... | 14 |
| Pound Spawn on Kelp Fishery..... | 14 |
| Bait & Food Fishery..... | 15 |
| Herring Research..... | 15 |
| 1984 OUTLOOK..... | 16 |
| ACKNOWLEDGEMENTS..... | 123 |

PREFACE

This is the twenty-fourth annual management report prepared since the State assumed control of the fisheries from the federal government in 1960. The 1982 and 1983 data is preliminary and will be finalized and corrected in subsequent reports. Data presented here supersedes information in previous management reports.

Table 1 is the most current and tables summarizing individual Districts may vary.

The report presents a brief description of the 1983 fishery and summarizes recent historical catch, escapement and related data on each species harvested by the commercial and subsistence salmon and herring fisheries.

LIST OF TABLES

| <u>Table</u> | <u>Page</u> |
|---|-------------|
| 1. Preliminary salmon catch by district, Prince William Sound Area, 1983..... | 17 |
| 2. Commercial salmon catch by species from all Prince William Sound districts, 1974 - 1983..... | 18 |
| 3. Copper River district sockeye salmon fishery, anticipated catch and escapement; fishing effort & fishing time allowed, 1983..... | 19 |
| 4. Commercial salmon catch by period and species, Copper River district, 1983..... | 20 |
| 5. Copper River district salmon catch by species, 1974 - 1983..... | 21 |
| 6. Sockeye salmon escapement estimates, Copper River district, 1970 - 1983..... | 22 |
| 7. Copper River sonar counts, Miles Lake, 1983..... | 23 |
| 8. Copper River aerial survey index of sockeye salmon spawning escapements, 1971 - 1983..... | 24 |
| 9. Escapement estimates, Copper River delta and Bering River sockeye salmon..... | 25 |
| 10. Sockeye escapement estimates, Copper River delta and Bering River... | 26 |
| 11. King salmon escapement index - Copper River..... | 27 |
| 12. Copper River Delta, Bering River, aerial survey estimates, coho salmon, 1964-1983..... | 28 |
| 13. Estimated age and sex composition of the commercial catches of sockeye salmon in the Copper River district, by calendar week, 1983. | 29 |
| 14. Estimated age and sex composition of the commercial catches of chinook salmon in the Copper River district, by calendar week, 1983. | 32 |
| 15. Estimated age and sex composition of the commercial catches of coho salmon in the Copper River district, by calendar week, 1983.... | 34 |
| 16. Estimated age and sex composition of the commercial catches of sockeye salmon in the Bering River-Controller Bay subdistrict(s), Kayak Island subdistrict, and the Bering River district combined.... | 36 |
| 17. Estimated age and sex composition of the commercial catches of coho salmon in the Bering River-Controller Bay subdistrict(s), Kayak Island subdistrict, and the Bering River district combined.... | 38 |
| 18. Prince William Sound Area subsistence fishery, 1983..... | 40 |

LIST OF TABLES

| <u>Table</u> | <u>Page</u> |
|--|-------------|
| 19. Copper River Delta gill net salmon subsistence catch and effort, 1960 - 1983..... | 41 |
| 20. Prince William Sound salmon subsistence catch and effort, 1960-1983.. | 42 |
| 21. Copper River subsistence fishery data, 1948-1983..... | 43 |
| 22. Commercial salmon catch by period and species, Bering River district, 1983..... | 44 |
| 23. Bering River district salmon catch by species, 1974-1983..... | 45 |
| 24. Commercial salmon catch by species in the general purse seine districts, Prince William Sound, 1974-1983..... | 46 |
| 25. Commercial salmon catch by species, by week in the general purse seine districts, Prince William Sound, 1983..... | 47 |
| 26. Salmon harvests by species from private nonprofit hatcheries, Prince William Sound, 1978-1983..... | 48 |
| 27. Commercial salmon catch by all gear, by species, Prince William Sound, 1974-1983..... | 49 |
| 28. Pink and chum salmon returns to Prince William Sound, 1983..... | 50 |
| 29. Pink salmon runs, Prince William Sound, 1960-1983..... | 51 |
| 30. Chum salmon runs, Prince William Sound, 1960-1983..... | 52 |
| 31. Chum salmon age composition, by sex, Prince William Sound, 1983..... | 53 |
| 32. Sockeye salmon escapement counts from selected systems in Prince William Sound, 1983..... | 54 |
| 33. Commercial catch of salmon by species by period, by gear type in the Coghill district, Prince William Sound, 1983..... | 55 |
| 34. Coghill district salmon catch by species and gear, 1974-1983..... | 56 |
| 35. Salmon escapement by species in the Coghill district, 1974-1983..... | 57 |
| 36. Coghill River weir salmon counts, 1983..... | 58 |
| 37. Estimated age and sex composition of sockeye salmon caught in the Coghill district, drift gillnet fishery, 1983..... | 59 |
| 38. Estimated age and sex composition of sockeye salmon escapement through Coghill River weir, 1983..... | 61 |
| 39. Estimated age and sex composition of the sockeye salmon escapement, Eshamy Lake, 1983..... | 62 |

LIST OF TABLES

| <u>Table</u> | <u>Page</u> |
|---|-------------|
| 40. Commercial catch of salmon by species, by period, by gear type in the Unakwik district, Prince William Sound, 1983..... | 63 |
| 41. Unakwik district salmon catch by species and gear, 1974-1983..... | 64 |
| 42. Eshamy district salmon catch by species and gear, 1983..... | 65 |
| 43. Eshamy district salmon catch by species and gear, 1974-1983..... | 66 |
| 44. Salmon escapement from weir and stream food survey counts, Eshamy district, 1974-1983..... | 68 |
| 45. Eshamy River weir salmon counts, 1983..... | 69 |
| 46. Summary of season, location, effort and harvest by gear type in the Prince William Sound herring fishery, 1983..... | 71 |
| 47. Herring sac roe harvested in Prince William Sound, 1969-1983..... | 72 |
| 48. Herring eggs-on-kelp harvested from natural spawning, Prince William Sound, 1969-1983..... | 73 |
| 49. Herring for bait and food harvested in Prince William Sound in metric tons, 1970-1983..... | 74 |
| 50. Herring eggs on kelp produced in pounds, Prince William Sound 1979-1983 | 75 |
| 51. Daily aerial survey estimates of herring during the sac roe season in Prince William Sound, 1983..... | 76 |
| 52. Summary of peak aerial observations of sac roe herring, by district, Prince William Sound, 1974-1983..... | 79 |
| 53. Prince William Sound herring sac roe aerial surveys, peak estimates and seasonal harvests in metric tons, 1974-1983..... | 81 |
| 54. Age, sex & size frequency of sac roe herring captured by seine, Naked Island, Prince William Sound, 4/13/83..... | 82 |
| 55. Age, sex & size frequency of sac roe herring captured by commercial seine, Rocky Bay, Montague District, 1983..... | 83 |
| 56. Age, length, weight composition by sex of the herring sac roe, gillnet fishery, Galena Bay, 1983..... | 84 |
| 57. Age, sex & size frequency of herring captured for pound fishery by seine at Galena Bay, Prince William Sound, 1983..... | 85 |
| 58. Age, length, weight composition of sac roe herring taken by seine at Rocky Bay & Port Chalmers, Prince William Sound, 1983..... | 86 |

LIST OF TABLES

| <u>Table</u> | | <u>Page</u> |
|--------------|---|-------------|
| 59. | Age, sex & size frequency, sac roe herring taken by test gillnet, Port Chalmers, Montague District, 1983..... | 87 |
| 60. | Calendar weeks used in reporting catch statistics in 1983..... | 88 |
| 61. | Average price paid to fishermen for salmon and herring in Prince William Sound, 1978-1983..... | 89 |
| 62. | Average price paid per pound for salmon, shellfish and miscellaneous fish in the Prince William Sound Area, 1983..... | 91 |
| 63. | Average weight in pounds of salmon in commercial catches from the Prince William Sound Area, 1974-1983..... | 92 |
| 64. | Prince William Sound Area case pack and pounds of frozen, fresh, cured and exported salmon by species, 1974-1983..... | 93 |

LIST OF FIGURES

| <u>Figure</u> | | <u>Page</u> |
|---------------|--|-------------|
| 1. | Prince William Sound Area commercial fisheries salmon management areas..... | 94 |
| 2. | All species salmon catch, Prince William Sound, 1974-1983..... | 95 |
| 3. | Chinook salmon catch, Copper River district, 1974-1983..... | 96 |
| 4. | Sockeye salmon catch and escapement, Copper River district, 1974-1983 | 97 |
| 5. | Sockeye salmon escapement by week at Miles Lake sonar counter, Copper River, 1983..... | 98 |
| 6. | Expected and actual Copper River sonar counts of salmon at Miles Lake, 1983..... | 99 |
| 7. | Sockeye salmon catch by week, Copper River district, 1983..... | 100 |
| 8. | Coho salmon catch, Copper River district, 1974-1983..... | 101 |
| 9. | Sockeye salmon catch and escapement, Bering River district, 1974-1983 | 102 |
| 10. | Coho salmon catch, Bering River district, 1974-1983..... | 103 |
| 11. | Pink salmon catch and escapement, even years, Prince William Sound, 1964-1982..... | 104 |
| 12. | Pink salmon catch and escapement, odd years, Prince William Sound, 1965-1983..... | 105 |
| 13. | Chum salmon catch and escapement, Prince William Sound, 1974-1983.... | 106 |
| 14. | Sockeye salmon catch and escapement, Coghill district, 1974-1983..... | 107 |
| 15. | Sockeye salmon catch and escapement, Eshamy district, 1974-1983..... | 108 |
| 16. | Prince William Sound herring fishing districts and general area open to production of herring spawn-on-kelp..... | 109 |
| 17. | Special areas open to herring spawn on kelp fishery during the twelve hour period, April 27, 1983, Prince William Sound..... | 110 |
| 18. | Areas of herring spawning, General and Northern districts, Prince William Sound Area, April 8-April 29, 1983..... | 111 |
| 19. | Areas of herring spawning, Montague district, Prince William Sound Area, April 7-May 10, 1983..... | 112 |
| 20. | Areas of herring spawning, Eastern and Northern districts, Prince William Sound Area, April 8-May 10, 1983..... | 113 |
| 21. | All fisheries herring harvest, Prince William Sound 1974-1983..... | 114 |

LIST OF FIGURES

| <u>Figure</u> | | <u>Page</u> |
|---------------|--|-------------|
| 22. | Herring sac roe harvest and peak estimate, Prince William Sound, 1975-1983..... | 115 |
| 23. | Herring sac roe harvest and peak estimate, Eastern district, Prince William Sound, 1975-1983..... | 116 |
| 24. | Herring sac roe harvest and peak estimate, Northern district, Prince William Sound, 1975-1983..... | 117 |
| 25. | Herring sac roe harvest and peak estimate, Montague District, Prince William Sound, 1975-1983..... | 118 |
| 26. | Herring spawn on kelp harvest, Prince William Sound, 1974-1983..... | 119 |
| 27. | Bait/food herring harvest, Prince William Sound, 1970-1983..... | 120 |
| 28. | Prince William Sound sac roe, bait/food fish, fisheries percent contribution by age class, 1983..... | 121 |
| 29. | Prince William Sound herring sac roe seine fishery. Percent contribution by age class 1979-1983..... | 122 |

LIST OF APPENDICIES

Appendix

Page

| | | |
|----|--|-----|
| A. | A sequential listing of finfish processors, location of operation, size of cans, lines of machinery and type of product processed in 1983..... | 124 |
| B. | Copper River and Bering River sockeye, chinook and coho salmon escapement, 1983..... | 128 |
| C. | Coghill River field camp climatological and stream observations, 1983..... | 132 |
| D. | Eshamy River field camp climatological and stream observations, 1983..... | 133 |

INTRODUCTION

The commercial fisheries management area encompasses all coastal waters and inland drainages entering the northcentral Gulf of Alaska between Cape Suckling and Cape Fairfield (Figure 1). The area includes the Bering River, Copper River and all of Prince William Sound along with a total adjacent land area of approximately 38,000 square miles.

The Prince William Sound area consists of eleven management districts which correspond to the local geography and distribution of the five species of salmon harvested by the commercial fishery. The management objective for all districts is the achievement of desired escapement goals for major species while at the same time allowing for the orderly harvest of all fish surplus to spawning requirements. Escapements were optimum or above for all species except for sockeyes in the Coghill and Eshamy districts where the lower end of the escapement ranges were just barely reached (Table 35 and 45).

Legal gear for the salmon fishery includes purse seines and both drift and set gill nets. Drift gill net fishermen are the most numerous and are permitted to fish in the Bering River, Copper River, Coghill, Unakwik and Eshamy districts. In 1983, 486 drift gill net permit holders participated at least some time during the season. Set gill net gear is legal only in the Eshamy district, but only the Main Bay portion of this district was opened permitting 13 set gill nets to participate in the fishery this season. Purse seine gear is restricted to Prince William Sound proper, and is utilized primarily to harvest pink and chum salmon. A total of 267 purse seine fishermen participated during the peak of that fishery this season.

The 1983 season harvest amounted to 16.4 million fish with an ex-vessel value of approximately \$22.3 million (Table 1). This compares to an annual salmon harvest for the Prince William Sound area of approximately 11.8 million fish during the past decade (Tables 2 and 27 and Figure 2). With the single exception of sockeyes in the Coghill district, catches were at or above forecasted levels and included two new records for chinooks from the Copper River and sockeyes in the Bering River district. Early season price disputes delayed fishing during the seine season but peak processing capacity was not exceeded and fishermen were never placed on limits. Despite the large size of the harvest, the unfortunate consensus amongst fishermen is that the season was an economic disaster. The value was less than half of the \$48 million income of two years ago. Although harvests remain at or above historic levels, with smaller fish size, reduced prices and full participation of entry permits, individual earnings are down from the past few seasons.

Copper River District

The pre-season outlook suggested a below average sockeye salmon harvest of 350-550,000 fish after allowing for a desired escapement range of 250-350,000 fish in the upriver spawning areas. This was predicted on the fact that the parent year escapement was below desired levels with a likely weakness in the early segment of the run. The fishery was not restricted until midway through the season in 1978 and in addition to a minimal overall escapement, the distribution in fish was heavier on the projected later segment of the run. Management strategy in 1983 included a May 16 season opening with a maximum of two

fishing periods per week depending on the development of the run. In anticipation of possible weakness in the early segment of the run, management of the first few weeks in the season was expected to be conservative. The projected season harvest was allocated into expected weekly harvests based on the historic pattern of catch in the commercial fishery. In-season escapement trends were monitored using sonar counters on the Main Copper River coupled with aerial surveys of major spawning areas on the river delta not covered by the sonar. Adjustments in weekly fishing time were made based on the observed day to day changes in the status of the run compared to catch expectations and desired escapement goals.

The opening period was 36 hours long and a timely price settlement allowed the entire fleet to make it out. An estimated 380 boats managed a harvest of 45,850 sockeye which was near the anticipated minimum for this first week and no additional fishing time was permitted. Poor weather was somewhat of a factor in reducing effort but catches appeared to be light with no major buildup of sockeyes apparent at anytime during the period. One factor that was suspected of reducing the size of the buildup was that due to the calendar date shift this year, the opening week was earlier than most years and the expected weekly production would normally be only 5-10% of the season total rather than 15% as expected.

King salmon catches were strong and some effort was concentrated on this species with larger mesh gear.

The sonar counter at Miles Lake was placed in the river and operational by May 23 after being delayed by ice conditions. A significant number of fish was enumerated from the beginning with a rapidly increasing rate observed during the first few days. The sonar was operational in time to enumerate the first significant escapements but due to the delay in migration of fish through the fishery to Miles Lake, the escapement trend was not clear until the first week in June.

A single 36 hour period was allowed during each of the next two weeks. The period on May 23 produced an additional 112,000 sockeye salmon which was above the midpoint of the anticipated weekly catch and no additional fishing was permitted until the following Monday. The third period on May 30 was also 36 hours and the peak effort of the season (486 boats) managed an additional 93,000 sockeye salmon (Table 4 and Figure 7). This catch was also above the anticipated weekly harvest despite reduced effort due to prevailing poor weather. Daily and cumulative escapements at Miles Lake lagged behind optimum levels until late in May. Daily escapements declined sharply for four consecutive days in late May (5/27-30) as a result of the period on May 16-17 and produced temporary concerns over the escapement trend. It wasn't until the end of the first week of June that the cumulative escapement was at or above desired levels for that stage of the season (Figure 5 Table 7).

With weekly catches progressing ahead of expectations and escapements continuing to build ahead of desired levels, fishing time was increased by 12 hours during each of the next four weeks. From the week of June 27 through the end of the sockeye season two periods were allowed each week for a total of 84 hours each week. During this period the effort declined to about 150 boats as the fleet dispersed to other districts or participated in other fisheries. Catches

during the summer season remained considerably above normal levels despite the reduced effort and the escapement continued at above desired levels until the sonar was pulled in early August. Aerial assessments of Copper River delta escapements revealed sockeyes were at desired levels there also although not on par with the large escapements observed there during the past few seasons (Table 8).

The season harvest of 615,000 sockeye was almost 200,000 above pre-season projections and above the ten year average of 508,000 fish. Fishing time was increased throughout the season as catch and escapement data warranted it with good distribution experienced over all segments of the run. Escapements into the Upper Copper River were nearly 200,000 fish above optimum levels with only the first three weeks of the season falling behind desired levels (Tables 3 and 6). From June 19 until the completion of counting, the main river escapement amounted to 180,000 fish compared to desired escapements of only 72,000 fish. The significance of this distribution is that most of the season escapement in terms of percent of the desired numbers can in the latter stages of the run rather than in the more intensely managed early part of the season.

Sampling of the commercial sockeye catch revealed a normal preponderance of five year old fish. Age-length data from sockeye salmon sampling are summarized in Table 13.

King salmon are harvested incidental to the sockeye salmon with a small percentage of the fleet fishing large mesh king gear for the first period or so. The king salmon run was also unexpectedly strong and continued later in the season than normal. The season catch of 50,022 king salmon established a new record for this species in the Copper River district. This compares to the recent ten year average of almost 27,000 fish (Table 5 and Figure 3). King salmon escapements into the main Copper River were above average and well distributed. Age-length analysis data of king salmon sampled from the commercial catch are summarized in Table 14.

As anticipated, the coho salmon return was also above average. Like 1982, a price settlement was negotiated prior to the season and allowed full fishing effort for the season opener on August 8. Fishing effort was fairly stable this year but the peak effort of 292 boats was approximately 100 boats less than what participated during the 1982 season. The season continued uninterrupted until October 13, when buying was discontinued and effort ceased. The total catch of 234,243 fish was 36,096 above average and the third largest catch made during the last ten years (Table 5 Figure 8). Age-length data of coho salmon sampled from the commercial catch are summarized in Table 15.

Aerial surveys of coho spawning systems provide an index to the escapement. Inclement weather and muddy streams make comparable annual escapement estimates difficult. However, preliminary indications from surveys suggest above average coho escapements in almost all spawning systems.

Subsistence Fishery

Subsistence fishing for salmon in the Prince William Sound Area is permitted in the commercial fishing districts as well as in selected areas of the Upper Copper River. Catches are monitored through the use of a mandatory permit system that is available to Alaska residents only.

In the commercial districts subsistence fishing is restricted to methods, means and times that are consistent with those of the commercial fishery. The number of subsistence fishermen operating in these districts has fluctuated widely over the years, but catches have remained small. The number of subsistence permits and reported catches for the Copper River delta and Prince William Sound proper in recent years are outlined in Tables 19-20.

Subsistence fishing for salmon in the upper Copper River is permitted with dip nets and fishwheels in separate fishing districts. The parent year indicated below average return for 1983, but a fully adequate escapement was anticipated including sufficient numbers to provide for an unrestricted subsistence fishery. The Department advised the public that with the anticipated weak return of salmon, restrictions could become necessary if escapement trends fell below minimum desired levels. Seven day per week (unrestricted) fishing time was announced in late May while acknowledging that sonar counts during the season might necessitate adjustments in fishing time. Sonar counts ultimately verified that the sockeye return was stronger than anticipated, thus no restrictions were applied to the subsistence fishery, and it opened June 1 as scheduled. Throughout the entire Copper River subsistence fishing season, sonar counts indicated a run in excess of the 350,000 salmon desired escapement level, thus no restriction was applied per the requirements of the Management Plan. The entire season went without change and closed on September 30. The final sonar count of 545,724 fish (Table 7 and Figure 6) support the lack of restriction in the fishery.

The unrestricted fishery during 1981 - 1983 was in contrast to the 1980 season which was restricted for its entire duration and had special provisions made to take the chinook salmon present in normal abundance. In 1981 - 1983 no special restrictions were applied to any species.

In 1983 there were 6,911 dip net and 630 fishwheel permits issued for the upper Copper River subsistence fishery. The number of permits was significantly more for dip nets and in total. Preliminary figures show individuals fishing these permits harvested 100,995 sockeye, 5,421 chinook, 1,690 coho and 122 fish of other species (Table 18). The total reported catch was the largest on record and 295 percent of the ten year average (Table 21).

Bering River District

The pre-season outlook indicated an above normal fishery with a projected sockeye catch in the 40,000 - 60,000 range. The season was opened on June 13 for sixty hours and fishing periods were scheduled to coincide with those in the Copper River district to help distribute effort more evenly between the two districts. An aerial survey of the system prior to the season opening revealed a significant escapement already in the Bering River above the fishery and appeared to be about normal for that date. Peak effort occurred during the opening when 104 boats harvested approximately 28,000 sockeyes, (Table 22). Although effort decreased to 57 boats the following period and never increased to over 75 during the remainder of the sockeye season, catches were reasonably stable and remained so until the last week in July. The peak sockeye catch occurred during the 48 hour period on June 27 - 29 with a catch of over 28,000 fish (Table 22). Fishing effort continued uninterrupted throughout the regular season in contrast to the last few years when tender support had been withdrawn from the district for portions of the season.

A significant amount of the season harvest came from the waters offshore of Kayak Island between Cape Suckling and Pinnacle Rock. This continues a trend observed in recent years which has involved a shift in effort toward these outside cape areas which intercept a mixture of fish of unknown origin. Fishermen from the Yakutat area have expressed concern in recent years about the possible interceptions by the outside Kayak Island fishery of sockeye salmon bound for streams in their area. A petition to close the outside area was submitted by these fishermen just prior to the start of the Bering River season but was denied following a teleconference of the Board of Fisheries. Weather during the past season was generally moderate which permitted open ocean fishing throughout most of the sockeye season. Effort, probably due to the poor sockeye return to the Coghill district, also increased above past years and contributed to the large harvest.

The total catch for the season was over 179,000 sockeye salmon and far surpassed the previous peak catch in 1979 of 139,000 fish (Table 23 and Figure 9). The average sockeye harvest in this district during the past ten years is 61,000 fish.

Catch and effort data for the 1983 season is preliminary at this time but it appears that peak effort in the Cape area occurred during July 5 to 16 when 72 vessels fished the outside area. Approximately 179,300 sockeyes were harvested from the district with a reported 139,544 taken from the Cape sub-district.

Age-length data for sockeye salmon sampled from the commercial catch are summarized in Table 16.

Sockeye salmon escapements into Bering River district index streams and lakes were above average although surveys were hampered during peak periods by heavy siltation caused by the dumping of Berg Lake which flooded the Bering River valley. What effect the siltation had on Bering Lake spawners is unknown. Many sockeyes spawn in upwelling areas of the lake and these areas were clearing within a ten day period after the lake flooded. The peak escapement into index streams in 1983 amounted to 41,200 (Table 9 and Appendix Table B). The general status of sockeye salmon stocks in the Bering River district has remained above average in recent years. Escapements of sockeye salmon into local systems in the district are monitored through aerial surveys of key index streams. Escapements have averaged 36,600 fish during the past five years and are at desired levels for this district despite the increase in fishing effort and above average catches since 1979 (Table 10 and Figure 9).

The coho season opened on August 9, but it was not until late August that effort became significant. Pre-season projections indicated an above average harvest of cohos, and although early coho season catches were below average the return strengthened as the weeks passed and by season end had reached 118,000 fish which is above the 10 year average (Table 23 Figure 10). An unusual feature of the coho production in the district this season included a reported harvest of nearly 27,000 fish which were caught in the waters offshore of Kayak Island during the late June to late July period (Table 22).

Late season aerial surveys, although hindered by poor visibility, indicated that escapements were above average in most all Bering River district coho salmon index streams (Table 12).

Age-length data for coho salmon sampled from the commercial catch are summarized in Table 17.

Coghill & Unakwik Districts

Sockeye salmon returns to the Coghill district fell far short of anticipated levels while the Unakwik district harvest was above average. Based upon parent year escapements and the excellent marine survival during recent years a projected catch of 150,000-250,000 sockeyes was expected for the Coghill district. The district was opened for regular Monday through Thursday weekly fishing periods on June 20. Escapements past the Coghill Weir at this time were slightly above parent year counts indicating that the run was progressing as predicted.

The first weekly fishing period was extremely disappointing. Gillnet effort was high with 303 fishermen participating in the opening period, however, the period catch of only 11,800 sockeye salmon was the poorest recorded for the past ten years (Table 34 and Figure 14). Fishing time was curtailed to forty-eight hours the following week and when catches and escapements remained below desired levels, was decreased to thirty-nine hours the week after (Table 33). Despite the reduced fishing time during the second and third weeks there was very little improvement in the escapement counts and the district was closed the week of July 11 to the 16th. During the total closure of the district the lower end of the desired escapement goal range was reached and the district was reopened to allow a harvest of the surplus pink and chum salmon that were beginning to show in the district.

The total season sockeye salmon catch of 37,015 is one of the lowest recorded for this district.

The return of pink and chum salmon to Coghill River provided above average harvests for fishermen that continued to fish this district when it was reopened for the summer season. Catches of these species were the second highest in the last ten years. Pink escapements to streams along the west side of Port Wells began lagging behind desired levels by early August and the Coghill district was closed for the season effective with the end of the weekly period on August 12 in order to assure minimum escapement requirements for pink salmon in those areas. The eastern shore of Culross Island in the Northwestern district was also closed in order to protect pink salmon bound for streams in the Coghill district. Coghill River daily weir counts, climatological data, daily stream observations and age composition of escapement and the commercial catch are summarized in Appendix Table C and Tables 36-38.

Fishing periods in the Unakwik district coincided with those in the Coghill district, but only sockeye salmon catches were on par with the ten year average (Tables 40 and 41). Peak catches occurred here during the first week when over half of the season catch was taken by 28 drift gillnet fishermen.

Eshamy District

The sockeye return to Eshamy Lake was disappointing, and with no harvestable surplus of sockeye salmon available, this portion of the district remained closed the entire season. The final escapement of 10,020 fish into Eshamy Lake was half of the lower end of the desired escapement goal of 20,000-30,000 (Table 44 and Figure 15).

Age-length data for sockeye salmon sampled at the Eshamy weir are summarized in Table 39. Climatological data collected during the course of the season are summarized in Appendix Table D.

Main Bay, that portion of the Eshamy district that was opened to set & drift gillnet fishing, is discussed under the Hatcheries section of this report.

General Purse Seine Districts

The outlook for the general purse seine districts indicated above average returns for pink salmon and average for chum salmon. The chum return was expected to produce a harvest of 426,000 fish consisting of predominantly middle and late run stocks bound for streams in the Northwestern to Eastern areas of the Sound. The midpoint of the forecasted return of wild stocks of pink salmon suggested a likely harvest of 12.2 million fish from a total run of 13.7 million. The return of pink salmon was expected to be strong in all management districts since all districts had exceeded their escapement goals during the brood year. Early run pink salmon have produced harvestable returns during the past two odd year cycles permitting a late June opening of the general seine fishery. The early spawn in 1981 was severely impacted by torrential flooding, however, and the strength of late June returns was not expected to allow an opening of the season in 1983 until early July. The salmon markets remained depressed as the season approached and with fishermen and processors highly polarized over price negotiations, the prospects for a timely price settlement were poor.

Aerial surveillance of the early buildup of pink and chum salmon began on June 21. The numbers of fish observed during these surveys were much lower than expected in light of the large forecast and were only a fraction of what had been observed for comparable dates in recent odd year cycles. There were indications, on the other hand, that the chum run was developing at larger than expected levels. By the end of the first week of July the trend had changed only slightly with a gradual buildup of pink salmon and unexpectedly large number of chum salmon from the Eastern through the Northwestern districts.

Based on the observed buildup and the large forecast the season was opened on July 7 in the Eastern, Northern, Northwestern and Southeastern districts (Table 25). This provided a limited two day period during the first week over a portion of the Sound to permit a test of the moderate building trend. A majority of the fishermen and processors remained deadlocked over prices when the season opened and the fishing effort for this first two weeks was minimal. The catches reported during this period amounted to less than 100,000 pink salmon and were not indicative of the buildup of fish in the area. A special closure at the head of Wells Bay in the Northern district was imposed through July 17 to provide additional protection to early chum salmon stocks needed for hatchery egg takes.

A price settlement was reached in time for the entire fleet to make the start of the regular weekly period on July 18. Daily pink salmon catches remained at or above expected levels throughout the week and by the close of the period on Friday, July 22 the cumulative harvest was over 2.9 million. The strongest show was in the Southeastern areas with only moderate catches reported from the Northern and Eastern districts. Chum salmon catches were much larger than expected and the weeks catch amounted to nearly 300,000 fish with a majority coming from the Northern and Eastern districts.

Aerial surveys revealed a rapid buildup of pink salmon in the Southwestern and Montague districts. Based on continued above average catches and the observed show of fish in other areas all remaining purse seine districts were opened to fishing effective with the start of the weekly period on July 25. The peak weekly catch of the season occurred during this period with about 3.4 million pink salmon reported by local processors. The chum salmon catches remained strong and by the end of the period on July 29 the forecasted harvest of 426,000 fish had already been surpassed by over 200,000. Aerial surveys indicated escapements for both pinks and chums were progressing at or above desired levels in most areas through the end of July. The only exceptions were the west side of Port Wells in the Coghill district and in sections of the Northern district where pink salmon escapements lagged behind optimum levels.

Regular weekly fishing continued through August 12 by which time daily catches had begun a gradual but definite decline throughout the Sound. The Northern and Coghill districts were closed for the season effective with the end of the weekly period on August 12 in order to assure minimum escapement requirements for pink salmon in those areas. The eastern shore of Culross Island in the Northwestern district was also closed in order to protect pink salmon bound for streams in the Coghill district.

Catches continued to decline steadily during the next week and the Eastern district was closed for the season after August 19 as late run escapements began lagging there also. Pink salmon escapements in the remaining districts continued at above desired levels and the season remained open there until September 2 after all fishermen and processors ceased operations.

The season harvest of all species of salmon in the purse seine districts amounted to nearly 13.6 million fish which is the fourth largest harvest on record and 2.7 million above the recent ten year average. This was highlighted by a harvest of 12.7 million pink salmon. The total return for this species in all Prince William Sound districts exceeded 16 million fish and was the third largest run on record (Table 28 and Figure 12). Pink salmon escapements were at or above optimum levels in all districts (Table 29 and Figures 11 and 12).

The total run of chum salmon amounted to 1.4 million fish (Tables 28 and 30 Figure 13). The total run was the third largest on record. The estimated season escapement of nearly 360,000 fish was the second largest in the last 18 years, exceeded only by the 547,000 fish escapement in 1973. Escapements were at or above desired levels for all districts except for the Montague district (Table 30). Due to a loss of spawning and rearing areas on Montague Island as a result of the 1964 earthquake, desired escapements are no longer possible here through time and area management of the commercial fishery. Age composition data for chum salmon samples from the commercial catch is summarized in Table 31. The unusually large number of 5-year old fish contributed to the return that more than doubled pre-season expectations.

The sockeye catch in the general purse seine districts was 38,500 (Table 25). This compares to a ten year average of almost 67,000 sockeye salmon (Table 24). Escapements of sockeye salmon into various systems scattered throughout the districts are summarized in Table 32.

Hatcheries

Returns to major hatchery facilities in Prince William Sound fell slightly below projections with the exception of Main Bay which produced a larger than expected return of pink salmon (Table 26). With four facilities now reaching full production capacity, management activities are requiring more than simple monitoring of their returns. Several inseason adjustments of fishing time and area adjacent to hatcheries were required of the management staff in 1983.

The first significant return to the Solomon Gulch hatchery near Valdez was expected to produce about 220,000 adult pink salmon from a release of 7.4 million fry. The Special Harvest Area was opened by emergency order on July 2 after aerial surveys and test fishing revealed a buildup of pink salmon near the hatchery. Due to the glacial turbidity of the water adjacent to Solomon Gulch, aerial surveys provided very little quantitative information on the buildup of fish in the area. By July 9 about 79,000 pink salmon were harvested and sold to local processors to cover operating costs. No additional fish were sold after that time and the balance of the return was utilized for broodstock. The run failed to materialize and the final egg take of about 12.5 million fell far short of the goal of 50 million. An additional 2.25 million chum salmon eggs and 143,000 coho salmon eggs were taken from wild stocks at Crooked Creek and Corbin Creek, respectively.

The Cannery Creek hatchery was forecasted to produce a return of 609,000 pink salmon from a release of nearly 14 million fry in the spring of 1982. A majority of the return was expected to be available for commercial harvest after meeting brood-stock and creek escapement requirements of 83,000 fish. The general purse seine season was opened on July 7 in the Northern district but unresolved prices resulted in insignificant fishing effort during the first two weeks. The entire terminal harvest area at Cannery Creek was opened on July 25 to permit the harvest of early fish that were surplus to hatchery requirements. The terminal area remained open until August 8 when a 500 yard closure was required to provide protection for brood fish. The Northern district was closed for the season on August 12 and all remaining fish were utilized for escapement and broodstock. The total adult return was estimated to be 408,000 fish including a commercial harvest of 348,000. Nearly 125,000 of these fish were caught from the terminal area adjacent to the mouth of Cannery Creek. The final egg take amounted to 33 million from an escapement of 60,000 fish.

The Main Bay hatchery was forecasted to produce its first significant return with about 389,000 pink salmon expected from a release of 29 million fry. A majority of the return was expected to be available for commercial harvest after meeting brood-stock requirements of 44,000 fish. The season was opened within May Bay on July 25 when aerial surveys revealed a rapid buildup of fish in the terminal area near the hatchery. The area was opened to continuous fishing after July 29 when it appeared that additional fishing time would be required to harvest all surplus fish. On August 8 a 500 yard closure near the head of the bay was imposed to provide a holding area for broodstock. The balance of the Eshamy district remained closed throughout the season in order to protect sockeye salmon returning to Eshamy Lake. The return of sockeyes was not expected to be in excess of minimum escapement requirements. Peak effort in Main Bay during the season included 28 drift and 13 set net fishermen. The combined harvest for both gear types amounted to 355,009 pink salmon with

minor incidental catches of chum and sockeye salmon (Table 42). The sockeye catch was 2,052 fish. The season closed on September 2 but not until all fishing effort had ceased. The total return to the hatchery was estimated to be almost 497,000 pink salmon including brood-stocks, commercial harvest and surplus escapements. Brood-stock goals were achieved with an egg take of about 55 million. A special early season closure was also made in Wells Bay in the Northern district to provide necessary protection to chum salmon stocks needed for eggs to stock Main Bay hatchery. A combined egg take by the Main Bay hatchery and Prince William Sound Aquaculture Corporation for the proposed Esther Lake hatchery produced about 20 million eggs.

The returns to the Prince William Sound Aquaculture Corporation hatchery at Port San Juan was expected to be 3.8 million adult pink salmon from a release of 70 million fry in 1982. The season in the Southwestern district adjacent to the hatchery was opened on July 25 and regular five day per week fishing continued there until September 2 after all fishermen and processors ceased operations. No special openings were required in the terminal area near the Port San Juan hatchery this season since no fish were available in excess of harvest and brood-stock requirements. The hatchery sold nearly 687,000 pink salmon to offset operational costs but the value of the harvest fell short of their requirements. The commercial fishery concentrated effort on hatchery returns during early August and the total interception of hatchery fish during the season was estimated at about 3 million fish. The total return amounted to about 3.8 million pink salmon which was close to the pre-season run projection. The final pink salmon egg take totalled 92.8 million. An additional 9.9 million chum salmon eggs were taken from a combination of hatchery returns and wild stocks at the head of Port Fidalgo in the Eastern district.

Approximately 225 million eggs, consisting of 193 million pink eggs, 32 million chum eggs and 143,000 coho salmon eggs were incubated at all four major hatcheries during 1983.

1984 OUTLOOK

Salmon returns are expected to produce a commercial harvest of nearly 19 million fish for all species and districts (Appendix Table E).

The natural returns of pink salmon are forecasted to produce a surplus of 10.3 million fish above the escapement goal of 1.5 million. The total run is above the average of 6.3 million for the even year cycle (Table 29 and Figure 11). All management districts exceeded their escapement goals during the parent year so the distribution of the 1984 return should permit fishing in all districts.

The chum salmon return is expected to be above average with a forecasted harvest of 613,000 fish. As in the recent few years the majority of the return will be bound for the northern half of the Sound with some minor production expected from Hinchinbrook Island. Return timing is expected to be fairly well spread out over the entire commercial season. Supplemental production of chum salmon to area hatcheries is expected to be insignificant.

Pink salmon returns to both state and private hatcheries are expected to contribute an additional 6.8 million fish to the commercial fishery in excess of broodstock and cost recovery requirements.

Run projections for species and districts without formal forecasting programs are based on average historic production from brood year escapements that are likely to produce returns in 1984. Data on age composition and average maturity schedules are also considered wherever possible. Optimum environmental conditions have contributed to above average returns in recent years and could continue to exert a positive influence on chinook, sockeye and coho salmon returns in the coming year. These environmental factors are difficult to quantify, however, the upper limits of the projected harvest ranges have been increased somewhat for those species where potential influence exists.

The Copper River is expected to produce at average to somewhat above for sockeyes with above average production for chinooks which are taken incidental to the early sockeye fishery. The coho catch is projected to be somewhat above average with a combined harvest of 300,000 from the Copper River and Bering River districts. Sockeye salmon harvests in the Coghill and Unakwik districts should be near average with a projected catch of 70-110,000 fish.

The Eshamy district is expected to be open for the first time in four years and in addition to harvests of pink salmon returning to Main Bay hatchery should include incidental harvests of chums as well as sockeyes bound for Eshamy Lake.

MISCELLANEOUS

During the course of each season miscellaneous data are collected on the commercial fisheries in Prince William Sound that do not relate to any particular fishery but provide a valuable reference for information unavailable elsewhere. Items of this nature are discussed briefly in this section.

The 1983 calendar weeks presented in Table 60 were used in reporting catch statistics where fishing was conducted on a schedule with standard weekly fishing periods. The calendar weeks are included here as a reference of those tables in the report that summarize catches by week. Whenever possible, however, catch statistics are summarized by fishing period dates to better reflect the management strategy and catch trends that aren't evident in the more general weekly catches.

A fair to poor economic condition prevails despite near record harvests in recent years and follows on the heels of a recent trend of upgrading the area's fishing fleet and the addition of a number of new fishing vessels. Salmon prices generally declined in 1983, but were balanced by a harvest that was the fifth largest in the history of the fishery and above the recent ten year average of 11.8 million fish for all species and districts (Table 61). The situation has also been complicated by record returns of salmon statewide in recent years which have contributed to a depressed market fishery. The drift gill net fishery was average in 1983 with all time record harvests of chinook salmon and near average sockeye catches in the Copper River district. Coghill sockeye catches were one of the poorest ever recorded.

Prices for all species of salmon were down from the previous year and tended to diminish the relative value of the above average harvests reported this season. Due to a combination of a large carry-over in inventory, a depressed canned market impacted by recent canned salmon recalls, and a strong dollar, price negotiations were difficult. The lower relative value of the harvest has been further offset by continuing high interest rates and an inflationary trend which has impacted all phases of the fishing and processing industry in

recent years. Prices for sac roe herring were up considerably from the previous season, but harvests were below average levels. Prices in the spawn on kelp fishery were the highest ever reported. The average prices paid for salmon, shellfish and miscellaneous fish are outlined in Table 61 and 62.

Average weights by species from the commercial catches are summarized in Table 63. With the exception of chum salmon, fish were lighter in weight than the long term average and further contributed to the diminished value of the harvest compared to last year. The combined case pack, fresh, frozen and salmon exported to other areas for processing are summarized in Table 64. The list of finfish buyers and processors operating in Prince William Sound are included in Appendix Table A.

Special projects or management issues that developed during the past year also resulted in reports that were published under separate cover. These included a special report on the Kayak Island cape drift gillnet fishery and the results of a herring spawn deposition study which contain additional information on area fisheries.

HERRING SUMMARY

Introduction

The herring fisheries of the Prince William Sound area include: 1) a spring sac roe fishery; 2) a spring wild spawn on kelp fishery; 3) a pound herring spawn on kelp fishery; and 4) a fall and winter bait and food fish fishery.

The Northern, Eastern and Montague districts (Figure 16) have been established for the exclusive harvest of sac roe herring while fish for bait and food markets may be taken in the general district which includes all waters of the Sound exclusive of the sac roe districts. Wild spawn on kelp harvests can occur in all districts, but until the 1983 season only the kelp beds located in the vicinity of Valdez Arm and Port Fidalgo have contributed significantly to this fishery. Due to a combination of delayed and lighter than normal spawning in the traditional kelping areas the fishery was relocated to the Naked Island area thirty miles to the west. A new development also occurred in the wild kelp fishery this season when several fishermen succeeded in producing spawn on introduced and "open-pounded" kelp. The established pound herring spawn on kelp fishery had normally been restricted to Landlocked and Boulder Bays on the north side of Port Fidalgo but this fishery was also shifted north to Galena Bay due to a lack of fish in traditional areas. Guideline harvest levels regulate the harvest for each of these fisheries which collectively amount to an annual harvest equivalent to 7,500 metric tons of herring. The total value of these fisheries to fishermen in 1983 was approximately \$2.8 million dollars (Table 46). Tables 47 through 50 and Figures 21 and 22 present annual harvest information for the Prince William Sound herring fisheries for the past 14 years.

Sac Roe Seine Fishery

The management strategy for the sac roe seine fishery was changed somewhat for the 1983 season. Rather than open portions of the area to exploratory fishing in early April as had been done in the past, all fisheries were managed on a

field announcement basis with the emergency order period starting on April 1. Pre-season stock assessment commenced in January with hydroacoustic and trawl surveys in traditional over-wintering areas. Significant stocks were located in the Montague district in mid February but a total hydroacoustic biomass estimate was not possible because the schools were already breaking up and on the move at the time. Trawl sampling revealed an age composition dominated by seven year fish with some indication of significant new recruitment of three year old fish.

This was consistent with pre-season expectations since the stocks have been dominated during the past four years by the 1976 year class. Assuming a continuation of this pattern this season and only average recruitment of younger fish, all herring fisheries had been expected to produce average to somewhat below average catches. Historic sac roe production and peak annual biomass estimates are illustrated in Table 53 and Figure 22 through 25.

Aerial assessment continues to be the most dependable and consistent stock monitoring tool. Weather permitting, surveys were conducted on almost a daily basis throughout the season (Table 51). Cumulative pre-spawning stock estimates for all areas amounted to 25-35,000 tons including harvest during the purse seine and gill net fishery. This continues a downward trend since 1981 when the current cycle appeared to have peaked (Figures 21 and 22). Preliminary age analysis from catch samples reveals continued dominance by the 1976 year class. The seven year old fish comprised 33% of the purse seine catch and Age 3 fish appear to be contributing the most significant recruitment of younger age classes. The contribution by younger year classes to the purse seine catch included 28% Age 3 followed by less than 15% each of Ages 4-6 (Table 58).

Aerial surveys located the first significant show of fish in several widely scattered locations near the end of the first week of April (Table 51). The largest concentration of the season was observed on Montague Island on April 9 but these fish eventually dispersed northward to other areas of the Sound. The season was eventually opened for a one hour period on April 13 in two separate locations in both the Montague and General districts. The two areas were opened simultaneously in order to spread the effort out over a wider area. This opening produced a harvest of 24.75 metric tons with a majority coming from the Naked Island area (2,344 m.t.). Over 100 boats participated but only 72 actually made deliveries (Table 46). This harvest was below the long term average of 4,170 metric tons since the inception of the sac roe fishery in 1969 but was consistent with desired exploitation rates in light of the observed status of the stocks (Table 47 and Figure 22). There were 19 buyers on the grounds and the average roe recovery for the harvest was about 11% with an overall value of the catch at about \$1.8 million. The seine fleet remained on 24 hour standby notice for most of the remainder of the month on the remote chance that additional stocks would appear to justify more fishing. The fishery remained closed for the duration of the season. Combined biomass estimates of all stocks by season end suggested limited additional harvest could have been allowed but due to the long drawn out, widely scattered entry pattern this season and the difficulty of containing the catch by the seine boat fleet on small isolated stocks, there was never another opportunity for additional fishing. During late May a request was made by several seine fishermen to consider the possibility of another opening on stocks of fish located in the northwestern portion of the Sound. An aerial survey of the area on May 21 revealed about 1,500 tons of fish scattered over a wide area and because of the small biomass present, the apparent mixture of fish maturity and the lack of historical biological data on these stocks a fishery on these isolated stocks did not appear to be justified.

Age, sex and size data from samples collected during the fishery from both Naked Island and Montague Island are summarized in Tables 54 and 55. A special sample collected with a variable mesh gill net in Rocky Bay and Port Chalmers, Montague Island, was also analyzed since no commercial fishery occurred on these stocks this season. (Table 59:)

Sac Roe Gill Net Fishery

The fishery was opened for a single 24-hour period on April 21-22 in the vicinity of Galena Bay and Valdez Arm in the Northern district. The period produced a catch of 95.6 metric tons by the 22 boats participating (Table 46). Markets were very competitive with 10 buyers on the grounds and the total value is estimated at over \$105,000 with an average recovery of 11%. Prices escalated to near \$1,000/ton for 10% recovery near the end of the period and only five of the buyers present eventually purchased fish. The season was never reopened and the total harvest was less than 50% of the average catch for this fishery. The fishery was intentionally managed for a reduced harvest to maintain the removal at the level commensurate with the reduced biomass of stocks in the area this year. The gill net fishery has been restricted by regulation to the Northern district since its inception in 1980. As the stocks shift their migration routes and spawning patterns away from this traditional area, access to the available stocks by the gill net fleet is reduced.

Age, sex and size data from samples collected during the fishery are summarized in Table 56.

Natural Spawn on Kelp Fishery

The spawn on kelp season was opened for a 12-hour period on April 27. Due to a decline in the biomass of fish spawning in traditional kelp harvest areas of the Northern district, the fishery was relocated 30 miles away to the General district in the vicinity of Naked Island. This would normally have reduced the amount of participation because of the immobility of the fleet (small open skiffs predominate) but the weather was good and effort was about average. There were over 100 boats involved and the total harvest by 186 divers amounted to 303,235 pounds consisting of primarily ribbon kelp (51%) and sieve kelp (35%) (Table 46 and Figure 26). Fishermen here also had a competitive market this year with nine buyers paying approximately \$650,000 for the total harvest. Prices ranged from \$1.00/lb. for hair kelp to as high as \$3.00/lb for macrocystis kelp (Table 61). A significant new development in this fishery occurred this season when several fishermen imported Macrocystis kelp from Southeastern Alaska and were successful in producing almost 40,000 lbs. of spawn on this kelp harvested in the same locality and time as the regular kelp fishery. They strung the imported kelp in the midst of natural spawning prior to the opening and their production amounted to 13% of the total harvest. Their success has significant management and allocation implications for the future.

Pound Spawn on Kelp Fishery

The herring pound fishery in the Prince William Sound Area is the newest of the recognized four fisheries that currently target on herring or herring spawn. The recent development of the pound culture of herring eggs on kelp has been an outgrowth of the wild spawn on kelp fishery that first occurred in 1969. The impetus behind the development of the pound type fishery has been the desire to eliminate some of the uncertainties that have plagued the wild kelp fishery.

The pound technique involves the confinement of mature herring in a small enclosure (pound) along with carefully selected kelp, and hopefully force the fish to deposit their eggs there.

There were 47 permits issued this season and continued a pattern of rapid growth in participation in this new fishery. There were 38 pounds eventually constructed by the April 1 deadline. Although most pounds were constructed in the traditional pounding area in Landlocked and Boulder Bays in Port Fidalgo, a decline in the number of herring along with a shift in the normal migratory pattern of the fish necessitated a relocation of the pound fishery north to Galena Bay in the Valdez Arm area. This required a tow of over 15 miles for most operators. Seining of herring for introduction into the pounds was opened for 5 days from April 30 until May 4 during which 30 of the kelp filled pounds were stocked with varying amounts of herring. All 30 pounds reported some production and the total harvest amounted to 55,464 pounds (Table 50). Local ribbon kelp dominated the production with 64% of the harvest (35,364 lbs.) along with a lesser amount of imported Macrocystis kelp. The harvest was close to the guideline of 26 tons but would have been much more had all pounds produced at full capacity. The guidelines for this fishery are conservative and complicated but precise management remains difficult because several of the permit requirements are nearly unenforceable. The total value of the fishery is difficult to measure since most pound operators market their own product but would probably be in the neighborhood of \$250,000.

Age, sex and size data from random samples collected from herring pounds are summarized in Table 57.

Bait and Food Fishery

All of Prince William Sound, except designated sac roe harvest areas, is open from September 15 through January 31 for the harvest of herring for bait and food markets. This fishery is regulated by a 1,400 ton guideline harvest level. Legal gear for this fishery consists of seines, trawls and gill nets. However, in the past only trawls and seines have been used.

The 1983 season opened as scheduled on September 15. Bait markets have been minimal due to depressed statewide crab fisheries, and sales to food markets have not as yet materialized.

Only two seine vessels participated in the fishery this year and harvested an estimated 248.2 metric tons of bait herring. Table 49 and Figure 27 present comparative catch and effort data for this fishery.

Age, sex and size data from samples collected from commercial catches were unavailable by the time this report was printed so that data will be presented in the 1984 annual report.

Herring Research

Herring research in Prince William Sound includes the biological sampling of the commercial harvest to assess overall population condition and recruitment into the fishery. Hydroacoustic surveys are also conducted from a Department vessel to help locate pre-spawning concentrations of herring and to monitor their movements prior to the sac roe season. Activities also include ground and aerial surveys of spawning areas to document the extent and magnitude of spawning. A program of stock assessment based on a measure of spawn deposition was also initiated this season and preliminary results look promising. Coverage of all spawning areas was not possible due to time and budget constraints, but

complete coverage of one particular location corroborates fairly closely with estimates of biomass from aerial surveys. A separate report has been published under separate cover elaborating on herring spawn deposition surveys in Prince William Sound in 1983.

Figure 28 compares age data graphically between the sac roe gill net, sac roe seine and bait fisheries observed in 1983. Figure 29 presents age analysis comparisons for the years 1979-1983.

1984 OUTLOOK

As indicated from the 1983 aerial surveys, age analysis studies and current harvest trends, it appears that the herring stocks in the Prince William Sound Area are at a midlevel stage in the cycle with no dominance by a single year class. A majority of the production during the past five years has come from the 1976 year class. By 1984 fish from this brood year will be eight years old, and historic data doesn't suggest a major surplus production potential by this age. There was a significant contribution to the fishery in 1983 by three year old stocks for the first time in several years and could indicate a positive recruitment trend for the near future. If the present stocks maintain similar patterns of abundance (Figure 29) that have been exhibited in past cycles, all herring fisheries can be expected to produce average to somewhat below average catches unless another strong year class enters the fishery. Sonar and aerial surveys will be conducted during late winter and early spring prior to the opening of the sac roe season. These surveys will provide a better impression of the likely abundance, distribution and age composition of the spawning stocks in traditional sac roe districts. As herring are located in the three sac roe districts and an assessment can be made, the fishery will be managed on a field announcement basis.

A cycle pattern is expected to impact the spawn on kelp fishery in a similar fashion. Due to fluctuations in herring abundance, changes in timing, location and density of spawning in traditional harvest areas, there will be continued variation in the amount and quality of the harvest in the spawn on kelp fishery. The seaweed crop appears to be maintaining an annual harvestable surplus. With the present rate of harvest, as dictated by observed changes in herring stock levels, and barring any abnormal natural mortalities, the staff feels that the herring stocks can be maintained at levels similar to what has been observed over the past ten years.

Table 1. Preliminary salmon catch by district, Prince William Sound Area, 1983.²

| District | Chinook | Sockeye | Coho | Pink | Chum | Total |
|---------------------|---------|---------|---------|-------------------------|-----------------------|------------|
| General Purse Seine | 439 | 38,542 | 9,706 | 13,477,473 ¹ | 789,808 ¹⁰ | 14,315,968 |
| Coghill | 599 | 38,236 | 768 | 283,673 | 243,202 ²³ | 566,478 |
| Unakwik | 8 | 13,281 | 0 | 3,977 | 2,116 | 19,382 |
| Eshamy | 2 | 2,052 | 22 | 355,009 | 6,183 ³¹ | 363,268 |
| P.W.S. Subtotal | 1,048 | 92,111 | 10,496 | 14,120,132 | 1,041,309 | 15,265,096 |
| Copper River | 50,021 | 633,010 | 234,243 | 7,345 | 2,217 | 926,836 |
| Bering River | 610 | 179,273 | 117,669 | 851 | 4,615 | 303,018 |
| Area Total | 51,679 | 904,394 | 362,408 | 14,128,328 | 1,048,141 | 16,494,950 |

¹ Includes 765,924 fish from hatchery harvests.

² Preliminary figures as of 11/25/83.

Table 2. Commercial salmon catch by species from all Prince William Sound districts, 1974 - 1983.¹

| Year | Catch by Species | | | | | Total |
|-------------------|------------------|-----------|---------|------------|-----------|-------------------------|
| | King | Sockeye | Coho | Pink | Chum | |
| 1974 | 20,602 | 741,340 | 76,041 | 458,619 | 89,210 | 1,385,812 |
| 1975 | 22,325 | 546,634 | 84,109 | 4,453,041 | 101,286 | 5,207,395 |
| 1976 | 32,755 | 1,009,035 | 160,495 | 3,022,429 | 370,668 | 4,595,382 |
| 1977 | 22,864 | 953,782 | 179,777 | 4,537,808 | 576,395 | 6,270,626 |
| 1978 | 30,435 | 505,509 | 312,930 | 2,917,499 | 489,771 | 4,256,144 ² |
| 1979 | 20,078 | 369,583 | 315,774 | 15,638,258 | 349,615 | 16,693,308 ³ |
| 1980 | 8,643 | 206,724 | 337,085 | 14,158,552 | 482,080 | 15,193,084 ⁵ |
| 1981 | 20,782 | 784,469 | 397,163 | 20,558,304 | 1,888,822 | 23,649,540 ⁶ |
| 1982 ⁴ | 49,632 | 2,372,648 | 614,834 | 20,300,439 | 1,346,038 | 24,683,591 ⁷ |
| 1983 ⁴ | 51,679 | 895,394 | 362,408 | 14,128,328 | 1,048,141 | 16,485,950 ⁸ |
| 10 Year Average | 27,980 | 838,512 | 284,062 | 10,017,328 | 674,203 | 11,842,083 |

¹ Includes catches by all gear types from the General Purse Seine, Coghill, Unakwik, Eshamy, Copper River and Bering River districts.

² Includes 133,648 pinks from hatchery harvests.

³ Includes 223,761 pinks from hatchery harvests.

⁴ Preliminary

⁵ Includes 346,828 pinks from hatchery harvests.

⁶ Includes 707,037 pink, 118 chum and 1 sockeye salmon from hatchery harvests.

⁷ Includes 1,356,918 pink salmon from hatchery sales.

⁸ Includes 765,924 pink salmon from hatchery sales.

Table 3. Copper River District Sockeye Salmon Fishery
Anticipated Catch & Escapement vs. Actual Catch & Escapement;
Fishing effort & Fishing time allowed, 1983.

| Date | Week | Fishing Time (Hrs.) | Effort | Actual Catch | Anticipated Catch ¹ | Anticipated Cumulative Escapement ² | Actual Cumulative Escapement |
|---------------------------|------|---------------------------|--------|-----------------|-----------------------------------|--|------------------------------------|
| 5/15-5/21 | 21 | 36 | 380 | 45,850 | 67,000 | 16,440 | + |
| 5/22-5/28 | 22 | 36 | 466 | 112,061 | 94,500 | 68,230 | 51,209 |
| 5/29-6/4 | 23 | 36 | 486 | 93,396 | 85,500 | 141,370 | 144,344 |
| 6/5-6/11 | 24 | 48 | 482 | 82,820 | 49,500 | 208,210 | 241,913 |
| 6/12-6/18 | 25 | 60 | 324 | 53,736 | 40,500 | 247,050 | 317,693 |
| 6/19-6/25 | 26 | 72 | 140 | 52,982 | 31,000 | 278,190 | 366,428 |
| 6/26-7/2 | 27 | 84 | 137 | 51,944 | 22,500 | 302,680 | 404,244 |
| 7/3-7/9 | 28 | 84 | 166 | 37,971 | 18,000 | 319,470 | 438,175 |
| 7/10-7/16 | 29 | 84 | 163 | 29,402 | 9,000 | 333,110 | 474,642 |
| 7/17-7/23 | 30 | 84 | 72 | 22,660 | 4,500 | 341,500 | 505,933 |
| 7/24-7/30 | 31 | 84 | 60 | 18,188 | 4,500 | 346,740 | 534,781 |
| 7/31-8/6 | 32 | 84 | 71 | 9,013 | + | 349,870 | 545,724 |
| Season Total ³ | | 794 (Hrs.) | | 614,484 | 426,500 | 350,000 | 545,724 |

¹ Based on average historic catches for comparable weeks.

² Sonar escapement counts at Miles Lake, includes all species. Does not include an additional 80,000-90,000 sockeye salmon needed for delta streams

³ Total harvest includes historic catches occurring prior to week 21 (5%) and after week 32 (less than 1%).

Table 4. Commercial salmon catch by period and species, Copper River district, 1983.

| Dates | Fishing Time (Hrs.) | Effort | Catch by Species | | | | | Total |
|-------------|---------------------|--------|------------------|---------|---------|-------|-------|---------|
| | | | King | Sockeye | Coho | Pink | Chum | |
| 5/16-5/17 | 36 | 380 | 9,822 | 45,850 | | | 47 | 55,719 |
| 5/23-5/24 | 36 | 466 | 13,919 | 112,071 | | | 34 | 126,024 |
| 5/30-5/31 | 36 | 486 | 12,200 | 93,393 | | | 2 | 105,595 |
| 6/6-6/7 | 48 | 482 | 10,010 | 82,820 | 15 | | 131 | 92,976 |
| 6/12-6/15 | 60 | 324 | 3,190 | 53,726 | 6 | 31 | 375 | 57,328 |
| 6/20-6/21 | 36 | 116 | 384 | 29,675 | 11 | 150 | 96 | 30,316 |
| 6/23-6/25 | 36 | 140 | 201 | 23,307 | 116 | 340 | 210 | 24,174 |
| 6/27-6/29 | 48 | 137 | 112 | 32,409 | 369 | 735 | 311 | 33,936 |
| 6/30-7/2 | 36 | 133 | 51 | 22,115 | 213 | 722 | 102 | 23,203 |
| 7/4-7/6 | 48 | 166 | 40 | 26,270 | 806 | 1,544 | 198 | 28,858 |
| 7/9-7/10 | 36 | 141 | 20 | 11,701 | 302 | 447 | 42 | 12,512 |
| 7/11-7/13 | 48 | 163 | 30 | 25,884 | 1,418 | 595 | 115 | 28,042 |
| 7/14-7/16 | 36 | 143 | 15 | 13,896 | 488 | 786 | 38 | 15,223 |
| 7/18-7/20 | 48 | 55 | 11 | 15,506 | 218 | 316 | 31 | 16,082 |
| 7/21-7/23 | 36 | 72 | 1 | 7,154 | 451 | 293 | 11 | 7,910 |
| 7/25-7/27 | 48 | 60 | 4 | 9,955 | 982 | 697 | 15 | 11,653 |
| 7/28-7/30 | 36 | 52 | 3 | 8,752 | 581 | 119 | 4 | 9,459 |
| 8/1-8/3 | 48 | 71 | 1 | 8,387 | 3,237 | 261 | 282 | 12,168 |
| 8/4-8/6 | 36 | 65 | 0 | 626 | 1,048 | 2 | 10 | 1,686 |
| 8/8-8/11 | 84 | 240 | 0 | 3,711 | 25,459 | 224 | 36 | 29,430 |
| 8/15-8/18 | 84 | 255 | 3 | 4,847 | 47,479 | 63 | 126 | 52,518 |
| 8/22-8/25 | 84 | 292 | 4 | 757 | 54,864 | 12 | 0 | 55,637 |
| 8/29-9/1 | 84 | 258 | 0 | 176 | 34,852 | 7 | 1 | 35,036 |
| 9/5-9/8 | 84 | 231 | 0 | 19 | 34,507 | 1 | 0 | 34,527 |
| 9/12-9/15 | 84 | 135 | 0 | 2 | 17,603 | 0 | 0 | 17,605 |
| 9/19-9/22 | 84 | 98 | 0 | 1 | 6,277 | 0 | 0 | 6,278 |
| 9/26-9/26 | 84 | 31 | 0 | 0 | 1,728 | 0 | 0 | 1,728 |
| 10/3-10/6 | 84 | 15 | 0 | 0 | 1,081 | 0 | 0 | 1,081 |
| 10/10-10/13 | 84 | 7 | 0 | 0 | 132 | 0 | 0 | 132 |
| Total | | | 50,021 | 633,010 | 234,243 | 7,345 | 2,217 | 926,836 |

Table 5. Copper River district salmon catch by species, 1974 - 1983.

| Year | Catch by Species | | | | | Total |
|--------------------|------------------|-----------|---------|--------|-------|-----------|
| | King | Sockeye | Coho | Pink | Chum | |
| 1974 | 18,980 | 607,766 | 46,635 | 9,839 | 664 | 683,884 |
| 1975 | 19,644 | 335,384 | 53,805 | 236 | 807 | 409,876 |
| 1976 | 31,483 | 865,254 | 111,900 | 3,392 | 178 | 1,012,207 |
| 1977 | 22,089 | 619,140 | 131,356 | 23,185 | 335 | 796,105 |
| 1978 | 29,062 | 249,872 | 220,338 | 3,512 | 2,233 | 505,017 |
| 1979 | 17,678 | 80,528 | 194,885 | 1,295 | 107 | 294,493 |
| 1980 | 8,454 | 18,908 | 225,299 | 3,966 | 198 | 256,825 |
| 1981 | 20,178 | 477,662 | 310,154 | 23,952 | 1,799 | 833,745 |
| 1982 ¹ | 49,162 | 1,193,584 | 452,864 | 6,843 | 417 | 1,702 |
| 1983 ¹ | 50,022 | 633,010 | 234,243 | 7,345 | 2,217 | 926,837 |
| 10 Year Average | 26,675 | 508,111 | 198,147 | 7,672 | 896 | 742,185 |

¹ Preliminary.

Table 6. Sockeye salmon escapement estimates, Copper River District, 1970-1983.

| Year | Aerial Survey Counts | | | Upper River Sonar Count ³ |
|---------|----------------------|--------------------------|----------------|---|
| | Delta ¹ | Upper River ² | District Total | |
| 1970 | 36,712 | 73,945 | 110,657 | |
| 1971 | 45,270 | 70,232 | 115,502 | |
| 1972 | 49,235 | 32,031 | 81,266 | |
| 1973 | 26,801 | 64,345 | 91,146 | |
| 1974 | 18,493 | 29,417 | 47,910 | |
| 1975 | 32,060 | 11,190 | 43,250 | |
| 1976 | 41,000 | 24,276 | 65,276 | |
| 1977 | 40,455 | 72,763 | 113,218 | |
| 1978 | 65,850 | 23,488 | 89,338 | 194,372 |
| 1979 | 80,700 | 29,523 | 110,223 | 248,709 |
| 1980 | 119,150 | 55,595 | 174,745 | 283,856 |
| 1981 | 82,850 | 76,820 | 159,670 | 534,263 |
| 1982 | 62,000 | 89,945 | 151,945 | 467,277 |
| 1983 | 67,545 | 77,410 | 144,955 | 545,724 |
| Average | 54,866 | 52,213 | 107,079 | 379,034 |

¹ Peak aerial survey counts for seven index spawning areas.

² Peak aerial survey counts for twenty index spawning areas.

³ Counting station located at Miles Lake outlet and includes all species with an escapement goal of 250,000 - 350,000 fish.

Table 7. Copper River sonar counts, Miles Lake, 1983.

| SCKEYE | | | | | SCKEYE | | | | |
|--------|------------|------------|--------|---------|--------|------------|------------|-------|---------|
| Date | North Bank | South Bank | Daily | Cum. | Date | North Bank | South Bank | Daily | Cum. |
| MAY 23 | 301 | 3,009 | 3,310 | 3,310 | JULY 1 | 555 | 5,551 | 6,106 | 398,131 |
| 24 | 784 | 7,836 | 8,620 | 11,930 | 2 | 556 | 5,557 | 6,113 | 404,244 |
| 25 | 1,053 | 10,534 | 11,587 | 23,517 | 3 | 548 | 5,478 | 6,026 | 410,270 |
| 26 | 961 | 9,614 | 10,575 | 34,092 | 4 | 631 | 6,312 | 6,943 | 417,213 |
| 27 | 787 | 7,874 | 8,661 | 42,753 | 5 | 486 | 4,861 | 5,347 | 422,560 |
| 28 | 769 | 7,687 | 8,456 | 51,209 | 6 | 361 | 3,612 | 3,973 | 426,533 |
| 29 | 580 | 5,800 | 6,380 | 57,589 | 7 | 383 | 3,826 | 4,209 | 430,742 |
| 30 | 754 | 7,542 | 8,296 | 65,885 | 8 | 371 | 3,709 | 4,080 | 434,822 |
| 31 | 1,557 | 15,566 | 17,123 | 83,008 | 9 | 305 | 3,048 | 3,353 | 438,175 |
| 1 | 1,675 | 16,753 | 18,428 | 101,436 | 10 | 331 | 3,313 | 3,644 | 441,819 |
| 2 | 1,310 | 13,104 | 14,414 | 115,850 | 11 | 405 | 4,049 | 4,454 | 446,273 |
| 3 | 1,194 | 11,943 | 13,137 | 128,987 | 12 | 413 | 4,128 | 4,541 | 450,814 |
| 4 | 1,396 | 13,961 | 15,357 | 144,344 | 13 | 413 | 4,130 | 4,543 | 455,357 |
| 5 | 1,737 | 17,373 | 19,110 | 163,454 | 14 | 529 | 5,290 | 5,819 | 461,176 |
| 6 | 1,279 | 12,790 | 14,069 | 177,523 | 15 | 591 | 5,905 | 6,496 | 467,672 |
| 7 | 1,755 | 17,554 | 19,309 | 196,832 | 16 | 634 | 6,336 | 6,970 | 474,642 |
| 8 | 1,463 | 14,631 | 16,094 | 212,926 | 17 | 575 | 5,752 | 6,327 | 480,969 |
| 9 | 1,038 | 10,377 | 11,415 | 224,341 | 18 | 393 | 3,933 | 4,326 | 485,295 |
| 10 | 728 | 7,281 | 8,009 | 232,350 | 19 | 337 | 3,366 | 3,703 | 488,998 |
| 11 | 869 | 8,694 | 9,563 | 241,913 | 20 | 363 | 3,625 | 3,988 | 492,986 |
| 12 | 1,208 | 12,084 | 13,292 | 255,205 | 21 | 406 | 4,057 | 4,463 | 497,449 |
| 13 | 1,222 | 12,222 | 13,444 | 268,649 | 22 | 444 | 4,437 | 4,881 | 502,330 |
| 14 | 1,257 | 12,574 | 13,831 | 282,480 | 23 | 328 | 3,275 | 3,603 | 505,933 |
| 15 | 1,447 | 14,468 | 15,915 | 298,395 | 24 | 355 | 3,548 | 3,903 | 509,836 |
| 16 | 722 | 7,216 | 7,938 | 306,333 | 25 | 412 | 4,123 | 4,535 | 514,371 |
| 17 | 516 | 5,155 | 5,671 | 312,004 | 26 | 349 | 3,490 | 3,839 | 518,210 |
| 18 | 517 | 5,172 | 5,689 | 317,693 | 27 | 335 | 3,352 | 3,687 | 521,897 |
| 19 | 587 | 5,874 | 6,461 | 324,154 | 28 | 476 | 4,758 | 5,234 | 527,131 |
| 20 | 671 | 6,711 | 7,382 | 331,536 | 29 | 376 | 3,762 | 4,138 | 531,269 |
| 21 | 739 | 7,385 | 8,124 | 339,660 | 30 | 319 | 3,193 | 3,512 | 534,781 |
| 22 | 728 | 7,277 | 8,005 | 347,665 | 31 | 167 | 1,668 | 1,835 | 536,616 |
| 23 | 684 | 6,844 | 7,528 | 355,193 | AUG. 1 | 174 | 1,738 | 1,912 | 538,528 |
| 24 | 546 | 5,463 | 6,009 | 361,202 | 2 | 201 | 2,010 | 2,211 | 540,739 |
| 25 | 475 | 4,751 | 5,226 | 366,428 | 3 | 190 | 1,898 | 2,088 | 542,827 |
| 26 | 513 | 5,125 | 5,638 | 372,066 | 4 | 263 | 2,634 | 2,897 | 545,724 |
| 27 | 431 | 4,037 | 4,738 | 376,804 | | | | | |
| 28 | 436 | 4,335 | 4,771 | 381,575 | | | | | |
| 29 | 391 | 3,913 | 4,304 | 385,879 | | | | | |
| 30 | 559 | 5,587 | 6,146 | 392,025 | | | | | |

Tab. 8. Copper River aerial survey index of sockeye salmon spawning escapements, 1971-1983.

| System | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 |
|--------------------------------|--------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|---------|
| Eyak Lake | 5800 | 12275 | 6000 | 4625 | 17500 | 8500 | 8000 | 13450 | 13500 | 22500 | 11300 | 11700 | 8900 |
| McKinley Lake | 1200 | 5050 | 1800 | 2000 | 8000 | 6000 | 15000 | 18000 | 25000 | 27500 | 10000 | 9500 | 12000 |
| 39 Mile Creek | 8270 | 14910 | 5511 | 2400 | 2500 | 3500 | 4500 | 6500 | 17500 | 18000 | 9500 | 13000 | 13000 |
| Lake Tokun | 20000 | 2000 | 8000 | 1468 | 1200 | 8500 | 4201 | 6600 | 6500 | 17000 | 8500 | 7000 | 7645 |
| Little Martin Lake | 3000 | 3000 | 1500 | 1500 | 2000 | 8000 | 1550 | 4500 | 4000 | 6500 | 2500 | 6000 | 6000 |
| Martin Lake | 2000 | 7000 | 2000 | 1500 | 460 | 4000 | 4094 | 10500 | 10000 | 17650 | 26050 | 5300 | 9000 |
| Martin River Slough | 5000 | 5000 | 1990 | 5000 | 400 | 2500 | 3100 | 6300 | 4200 | 10000 | 15000 | 9500 | 11000 |
| Copper River Delta Subtotal | 45270 | 49235 | 26801 | 18493 | 32060 | 41000 | 40455 | 65850 | 80700 | 119150 | 82850 | 62000 | 67545 |
| Salmon Creek | 275* | 0 | 200 | 400 | OP | 300 | 275* | 50 | 450 | 1500 | 250 | 850 | 1,550 |
| Tonsina Lake | 500 | 250 | 300 | 200 | 250 | 900 | 432* | 4 | 775 | 650 | 1725 | 1700 | 2,850 |
| Mahlo Creek | 12400 | 1525 | 4500 | 500 | 314G | 600 | 5200 | 300 | 450 | 1000 | 1800 | 3300 | 2,400 |
| St. Anne Creek | 25100 | 1900 | 7400 | 2100 | 449G | 1700 | 7000 | 1150 | 730 | 5000 | 4700 | 8800 | 9,700 |
| Mendeltna Creek | 870 | 1950 | 1200 | 332 | 325 | 900 | 3900 | 725 | 350 | 1125 | 4830 | 400 | 2,850 |
| Keg Creek | 810* | 0 | 1435 | 190 | 256 | 125 | 725 | 1050 | 1300 | 2335 | 320 | 495 | 620 |
| Dickey Lake | 170 | 73 | 2500 | 10 | 25 | 0 | 650 | 75 | 13 | 250 | 20 | 410 | 135 |
| Swede Lake | 9 | 400 | 350 | 15 | 6 | 10 | 750 | 80 | 155 | 400 | 450 | 1400 | 550 |
| Paxson Lake Outlet | 3400 | 2700 | 4300 | 1000 | 550 | 2100 | 3800 | 2500 | 1900 | 3800 | 1500 | 3800 | 3,300 |
| Inlet to Mud Creek | 7900 | 5818 | 10500 | 14300 | 2100 | 4200 | 6000 | 2700 | 5400 | 8200 | 2200 | 1150 | 7,500 |
| Mud Creek and Lake | 600 | 850 | 500 | 300 | 400 | 1100 | 650 | 150 | 460 | 740 | 810 | 1900 | 470 |
| Mud Cr. - Summit Lake | 3250 | 1675 | 5700 | 2700 | 1200 | 1900 | 5900 | 800 | 2600 | 3075 | 3400 | 17400 | 5,700 |
| Fish Lake | 700P | 4500 | 6300 | 800 | 2800 | 900 | 8000 | 2650 | 1700 | 3175 | 8800 | 22560 | 5,500 |
| Bad Crossing #1 & #2 | 6 | 0 | 9275 | 650 | 5 | 16 | 8400 | 600 | 650 | 75 | 15000 | 4550 | 2,000 |
| Fish Creek) | 900 | 650 | 2200 | 450 | 200 | 250 | 6900 | 1300 | 350 | 900 | 10500 | 1700 | 900 |
| Mentasta Lake) | 2295 | 800 | 2700 | 700 | 450 | 600 | 3500 | 3600 | 2500 | 3200 | 7400 | 3250 | 6,800 |
| Suslota Lake | 4550 | 4830 | 3400 | 400 | 0 | 100 | 300 | 1200 | 1000 | 1700 | 300 | 1800 | 5,600 |
| Tanada Lake | 4093 | 930 | 10 | 3100 | 700 | 6100 | 9100 | 2625 | 5175 | 13700 | 11200 | 11680 | 10,900 |
| Long Lake | 2000 | 3000 | 150 | 750 | 1100 | 2450 | 877 | 1425 | 3100 | 2650 | 1325 | 1700 | 5,600 |
| Tana River | 404* | 180 | 1425 | 520 | 60 | 25 | 404* | 504 | 465 | 2130 | 290 | 1100 | 2,485 |
| Upper Copper River Subtotal | 70232 | 32031 | 64345 | 29417 | 11190 | 24276 | 72763 | 23488 | 29523 | 55595 | 76820 | 89945 | 77,410 |
| TOTAL | 115502 | 81266 | 91146 | 47910 | 43250 | 65276 | 113218 | 89338 | 110223 | 174745 | 159670 | 151945 | 144,955 |

* = interpolated. P = poor. G = ground survey.

Table 9. Escapement estimates, Copper River delta and Bering River sockeye salmon.

| Stream/Lake | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 |
|--------------------|--------|--------|--------|----------|--------|---------|---------|---------|--------------|--------|
| Evak Lake | 4,625 | 17,500 | 8,500 | 11,500 | 13,450 | 13,500 | 22,500 | 11,300 | 11,700 | 8,900 |
| McKinley Lake | 2,000 | 8,000 | 6,000 | 15,000 | 18,000 | 25,000 | 27,550 | 10,000 | 9,500 | 12,000 |
| 39 Mile | 2,400 | 2,500 | 3,500 | 4,500 | 6,500 | 17,500 | 18,000 | 9,500 | 13,000 | 13,000 |
| Tokun Lake | 1,468 | 1,200 | 8,500 | 4,201 | 6,600 | 6,500 | 17,000 | 8,500 | 7,000 | 7,645* |
| Tokun Outlet | | 2,000 | 2,500 | 700 | 4,000 | 10,000 | 7,100 | 7,350 | 300 | 300 |
| Martin Lake | 1,000 | 460 | 4,000 | 4,094 | 10,500 | 10,000 | 17,650 | 26,050 | 5,300 | 9,000 |
| Pothole Lake | | 3,000 | 3,000 | 550 | 1,100 | 5,000 | 8,000 | 4,500 | 1,200 | 5,500 |
| Little Martin Lake | 1,500 | 2,000 | 8,000 | 1,550 | 4,500 | 4,000 | 6,500 | 2,500 | 6,000 | 6,000 |
| Martin River | 4,000 | 1,500 | 1,500 | 1,450 | 3,500 | 8,200 | 3,500 | 5,350 | 1,000 | 3,650 |
| Ragged Pt. Lake | 2,000 | 2,500 | 4,000 | 3,500 | 5,500 | 20,000 | 13,000 | 8,000 | 7,000 | 8,500 |
| Martin Sloughs | 5,000 | 400 | 2,500 | 3,100 | 6,300 | 4,200 | 10,000 | 15,000 | 9,500 | 11,000 |
| Martin Lk. Outlet | 4,000 | 1,500 | 2,500 | 1,450 | 3,500 | - | 9,000 | 3,800 | ¹ | 5,000 |
| Total | 27,993 | 42,560 | 54,500 | 51,595 | 83,450 | 123,900 | 159,800 | 111,850 | 71,500 | 90,495 |
| Bering Lake | 20,580 | 4,000 | 40,000 | 8,000 | 7,000 | 13,500 | 12,000 | 20,000 | 7,300 | 26,500 |
| Dick Creek | 6,600 | 1,971 | 2,000 | 1,500 | 6,300 | 11,000 | 11,000 | 20,000 | 9,500 | 4,000 |
| Shepard Creek | 15,000 | 150 | 5,500 | NC-glac. | 6,000 | NC-silt | 7,800 | 9,000 | 10,500 | 9,500 |
| Kushtaka Lake | 75 | 75 | 2,500 | " | 3,500 | 2,500 | 1,000 | 5,500 | 1,350 | 1,200 |
| Total | 42,255 | 6,496 | 50,000 | 9,500 | 22,800 | 27,000 | 31,800 | 54,500 | 28,650 | 41,200 |

¹ Included in Martin Lake total.

* Weir count.

10. Sockeye Escapement Estimates, Copper River Delta and Bering River.

| Stream/Lake System | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 |
|------------------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| Eyak Lake ¹ | 20,200 | 9,450 | 13,600 | 16,250 | 14,500 | 27,800 | 17,150 | 13,800 | 11,100 |
| McKinley Lake ² | 10,600 | 10,000 | 16,000 | 20,819 | 29,000 | 32,000 | 20,800 | 23,000 | 20,500 |
| Tokun Lake ³ | 1,550 | 11,000 | 4,900 | 10,600 | 11,500 | 20,500 | 11,700 | 7,450 | 8,145 |
| Martin Lake ⁴ | 5,110 | 12,000 | 7,044 | 13,100 | 14,000 | 30,700 | 36,050 | 16,030 | 26,000 |
| Little Martin Lake | 2,000 | 8,000 | 1,550 | 4,500 | 4,000 | 8,000 | 2,500 | 6,020 | 6,000 |
| Martin River | 1,500 | 1,500 | 1,450 | 3,500 | 8,200 | 1,500 | 5,350 | 1,000 | 3,650 |
| Ragged Pt. Lake ⁵ | 3,000 | 4,000 | 3,750 | 5,500 | 20,000 | 18,000 | 9,500 | 13,500 | 10,000 |
| Martin Slough | 1,120 | 2,500 | 3,100 | 6,300 | 4,000 | 10,000 | 15,000 | 9,500 | 11,000 |
| 39 Mile | 2,500 | 3,500 | 4,500 | 6,500 | 17,500 | 18,000 | 11,000 | 13,000 | 13,000 |
| Total | 47,580 | 61,950 | 56,434 | 87,069 | 122,700 | 166,500 | 129,050 | 103,300 | 109,395 |
| Bering Lake ⁶ | 4,750 | 47,500 | 9,500 | 19,300 | 24,500 | 31,400 | 49,000 | 29,800 | 40,000 |
| Kushtaka Lake ⁷ | 375 | 2,500 | Muddy | 3,500 | 2,500 | 2,000 | 8,000 | 7,850 | 5,700 |
| Total | 5,125 | 50,000 | 9,500 | 22,800 | 27,000 | 33,400 | 56,000 | 37,650 | 45,700 |

¹ Includes Hatchery Creek & Power Creek

² Includes Salmon Creek

³ Includes Tokun Lake Outlet, River & Tokun Springs

⁴ Includes Martin Lake feeder stream, Pothold Lake, River & Martin Lake Outlet

⁵ Includes Ragged Point Lake Outlet & River

⁶ Includes Dick Creek, Shepard Creek, Carbon Creek & Maxwell Creek

⁷ Includes Shockum Creek, Clear Creek & Trout Creek

Table 11. King salmon escapement index - Copper River.

| Area | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 |
|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| East Fork Chistochina R. | 512 | 348 | 476 | 137 | 71 | 289 | 132 | 137 | 810 | 575 | 120 | 1,260 | 575 |
| Gulkana River | 269 | 1,200 | 623 | 1,317 | 741 | 777 | 1,090 | 921 | 1,380 | 718 | 754* | 1,656 | 931 |
| Mendeltna Creek | 56 | 49 | 15 | 15 | 38* | 35 | 73 | 52 | 5 | 3 | 51 | 70 | 12 |
| Kaina Creek | 81 | 89 | 172 | 55 | 123* | 37 | 91 | 125 | 279 | 247 | 191 | 200 | 166 |
| St. Anne Creek | 4 | 25 | 26* | 32 | 26* | 15 | 10 | 24 | 16 | 8 | 19 | 35 | 87 |
| Manker Creek | 30 | 4 | 17 | 29 | 19* | 6 | 15 | 20 | 16 | 35 | 23 | 49 | 141 |
| Grayling Creek | 45 | 47 | 47 | 49 | 48* | 17 | 48* | 92 | 153 | 66 | 107 | 127 | 287 |
| Little Tonsina R. | 200 | 129* | 100 | 65 | 161 | 98 | 35 | 285 | 285 | 70 | 191 | 440 | 330 |
| Indian River | 20* | 13 | 20* | 4 | 6 | 61 | 20 | 9 | 29 | 24 | 20* | 179 | 41 |
| Total without interpolated counts | 1,197 | 1,775 | 1,450 | 1,654 | 979 | 1,335 | 1,446 | 1,665 | 2,973 | 1,746 | 712 | 4,016 | 2,570 |
| Counts missing | (1) | (1) | (2) | | (5) | | (2) | | | | (2) | | |
| Total with interpolated counts | 1,217 | 1,904 | 1,496 | 1,654 | 1,233 | 1,335 | 1,514 | 1,665 | 2,973 | 1,746 | 1,486 | 4,016 | 2,570 |

* interpolated.

Table 12. Copper River Delta, Bering River, aerial survey estimates, coho salmon, 1964-1983.

| System | 1964 | 1965 | 1968 | 1969 | 1971 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 |
|----------------|-------|------|------|------|-------|-------|-------|------|------|-------|------|-------|-------|-------|-------|-------|
| Evak Lake | 4000 | 3500 | 150 | 416* | 2070* | 2000 | 175 | 7350 | 3000 | 3700 | 903* | 6000 | 9200 | 2750+ | 7000 | 14600 |
| Hatchery Cr. | 300 | 400 | 3 | 88* | 436* | 213* | 533* | 592* | 108* | 543* | 190* | 568* | 1905* | 2500 | 125 | 1000 |
| Power Creek | 840* | 229* | 65* | 88* | 436* | 213* | 533* | 592* | 108* | 543* | 190* | 568* | 1905* | 800 | 1500 | 1000 |
| Ibek Creek | 1950 | 2000 | 327* | 250 | 2179* | 1065* | 4500 | 3500 | 540* | 3500 | 1575 | 850 | 12110 | 10000 | 1100 | 4200 |
| 19 Mile Creek | 50 | 300 | 33* | 44* | 218* | 107* | 267* | 200 | 54* | 35 | 95 | 500 | 100 | 1500 | 250 | 125 |
| McKinley Lake | 1050* | 287* | 82* | 110* | 545* | 266* | 15 | 740* | 135* | 679* | 238* | 500 | 2500 | 1344* | 500 | 5000 |
| Salmon Creek | 800 | 500 | 90* | 350 | 599* | 293* | 733* | 814* | 149* | 1300 | 262* | 781* | 2000 | 1700 | 4650 | 6500 |
| 26-27 Mile Cr. | 280* | 76* | 22* | 29* | 145* | 71* | 178* | 197* | 36* | 181* | 63* | 189* | 635* | 250 | 50 | 0 |
| 39 Mile Creek | 400 | 300 | 300 | 300 | 1380* | 2950 | 6500 | 2500 | 342* | 3000 | 4500 | 600 | 7100 | 1900 | 2000 | 6500 |
| Goat Mt. Cr. | 5300 | 497* | 142* | 500 | 944* | 461* | 1155* | 1500 | 234* | 1177* | 412* | 1230* | 800 | 500 | 50 | NC |
| Pleasant Cr. | 8000 | 900 | 25 | 350 | 745* | 500 | 550 | 100+ | 185* | 1500 | 325* | 970* | 500 | 1837* | 400 | 350 |
| Tokun Lake | 200 | 200 | 450 | 150 | 272* | 150 | 125 | 370* | 68* | 340* | 119* | 355* | 2000 | 672* | 400 | 125 |
| Tokun River | 945* | 258* | 74* | 99* | 490* | 150 | 333* | 500 | 122* | 611* | 214* | 639* | 2200 | 800 | 2000 | 225 |
| L. Martin L. | 1575* | 430* | 123* | 300 | 817* | 115 | 700 | 350 | 203* | 1019* | 357* | 1065* | 1500 | 6000 | 150 | 1125 |
| Martin River | 2695* | 735* | 300+ | 100 | 1160 | 1532 | 5500 | 525 | 347* | 2000 | 150 | 460 | 12855 | 4000 | 7500 | 3100 |
| Martin Lake | 1085* | 50 | 85* | 350 | 563* | 50 | 750 | 765* | 140* | 701* | 246* | 250 | 4500 | 1389* | 9000 | 6100 |
| Ragged Point | 1155* | 315* | 90* | 121* | 2000 | 293* | 733* | 814* | 149* | 747* | 262* | 781* | 2619* | 200 | 2500 | 200 |
| Ragged Outlet | 840* | 229* | 66* | 88* | 436* | 213* | 1800 | 150 | 108* | 300 | 190* | 568* | 1905* | 1000 | 50 | 325 |
| Martin Slough | 14000 | 1400 | 1500 | 1000 | 15000 | 1425 | 1600 | 8000 | 1500 | 7300 | 1700 | 14500 | 22000 | 10900 | 1350 | 9700 |
| Katalla R. | | | | | 17000 | 1200 | 4200 | 2500 | 200 | 5000+ | 3200 | 8000 | 3000 | 11500 | 4800 | |
| Bering Lake | | | | | 500 | 52 | 1000 | 50 | | 165 | | 1000 | 700 | 0 | 8000 | 4000 |
| Dick Creek | | | | | 1600 | 650 | 60 | 1200 | | 500 | | 1625 | 0 | 5500 | 7100 | |
| Shepard Cr. | | | | | | | | | | | | 0 | 600 | muddy | muddy | |
| Gandil R. | | | | | | | | | | | | 600 | 250 | muddy | muddy | |
| Nichawak R. | | | | | | | | | | | | | | 5000 | 800 | |

1 Years and streams without counts not surveyed due to weather, high water or turbulence. It should also be noted that counts were made as weather allowed and may or may not have been made during periods of peak abundance.

* Interpolated.

Table 13. Estimated age and sex composition of the commercial catches of sockeye salmon in the Copper River District, by calendar week, 1983.

| | | Brood Year and Age Group | | | | | | | | 1980 | |
|-------------------------------|--------------------------------------|--------------------------|----------------|----------------|------------|--------------|--------------|----------|------------|------------------|-------|
| | | 1977 | | | | 1978 | | | | 1979 | |
| | | 1.4 | 2.3 | 1.3 | 2.2 | 0.3 | 1.2 | 2.1 | 0.2 | Total | |
| Week(s) 21: 15 May - 21 May | | | | | | | | | | | |
| Sample Dates: 16 May - 17 May | | | | | | | | | | | |
| Sample Size: 1,068 | | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.1 43 | 19.0 8,715 | 23.7 10,904 | 0.3 129 | 4.6 2,104 | 0.9 429 | 0.0 0 | 0.0 0 | 48.6 22,322 | 48.6 |
| Females | Percent of Sample Number in Catch | 0.0 0 | 19.2 8,801 | 27.6 12,665 | 0.5 214 | 3.4 1,545 | 0.7 301 | 0.0 0 | 0.0 0 | 51.4 23,526 | 51.4 |
| Sexes Combined | Percent of Sample Number in Catch | 0.1 43 | 38.2 17,516 | 51.3 23,569 | 0.8 343 | 8.0 3,649 | 1.6 730 | 0.0 0 | 0.0 0 | 100.0 45,850 | 100.0 |
| Week(s) 22: 22 May - 28 May | | | | | | | | | | | |
| Sample Dates: 23 May - 24 May | | | | | | | | | | | |
| Sample Size: 1,105 | | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 12.4 13,894 | 25.8 28,903 | 0.1 101 | 3.4 3,752 | 2.3 2,637 | 0.0 0 | 0.0 0 | 44.0 49,287 | 44.0 |
| Females | Percent of Sample Number in Catch | 0.0 0 | 17.2 19,268 | 34.0 38,131 | 0.6 710 | 2.5 2,738 | 1.7 1,927 | 0.0 0 | 0.0 0 | 56.0 62,774 | 56.0 |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 0 | 29.6 33,162 | 59.8 67,034 | 0.7 811 | 5.9 6,490 | 4.0 4,564 | 0.0 0 | 0.0 0 | 100.0 112,061 | 100.0 |
| Week(s) 23: 29 May - 04 June | | | | | | | | | | | |
| Sample Dates: 30 May - 31 May | | | | | | | | | | | |
| Sample Size: 838 | | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 6.1 5,677 | 24.5 22,820 | 0.1 111 | 4.2 3,896 | 3.7 3,451 | 0.0 0 | 0.2 223 | 38.8 36,178 | 38.8 |
| Females | Percent of Sample Number in Catch | 0.1 111 | 9.4 8,794 | 40.3 37,623 | 0.5 445 | 5.1 4,787 | 5.6 5,232 | 0.0 0 | 0.2 223 | 61.2 57,215 | 61.2 |
| Sexes Combined | Percent of Sample Number in Catch | 0.1 111 | 15.5 14,471 | 64.8 60,443 | 0.6 556 | 9.3 8,683 | 9.3 8,683 | 0.0 0 | 0.4 446 | 100.0 93,393 | 100.0 |

Table 13. (Continued)

| | | Brood Year and Age Group | | | | | | | 1980 | |
|----------------------------------|--------------------------------------|--------------------------|--------------|----------------|--------------|----------------|----------------|----------|------------|------------------|
| | | 1977 | | 1978 | | | 1979 | | | |
| | | 1.4 | 2.3 | 1.3 | 2.2 | 0.3 | 1.2 | 2.1 | 0.2 | Total |
| Week(s) 24: 05 June - 11 June | | | | | | | | | | |
| Sample Dates: 06 June - 08 June | | | | | | | | | | |
| Sample Size: 799 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 4.1 3,420 | 29.1 24,152 | 0.9 726 | 3.5 2,902 | 8.0 6,634 | 0.0 0 | 0.3 207 | 45.9 38,041 |
| Females | Percent of Sample Number in Catch | 0.0 0 | 5.5 4,561 | 37.3 30,889 | 0.8 622 | 4.6 3,835 | 5.8 4,768 | 0.0 0 | 0.1 104 | 54.1 44,779 |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 0 | 9.6 7,981 | 66.4 55,041 | 1.7 1,348 | 8.1 6,737 | 13.8 11,402 | 0.0 0 | 0.4 311 | 100.0 82,820 |
| Week(s) 25-26: 12 June - 25 June | | | | | | | | | | |
| Sample Dates: 20 June - 21 June | | | | | | | | | | |
| Sample Size: 678 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.6 630 | 1.2 1,259 | 28.6 30,536 | 0.3 315 | 3.5 3,778 | 9.6 10,231 | 0.0 0 | 0.0 0 | 43.8 46,749 |
| Females | Percent of Sample Number in Catch | 0.0 0 | 1.9 2,046 | 41.0 43,758 | 0.3 315 | 7.7 8,184 | 5.3 5,666 | 0.0 0 | 0.0 0 | 56.2 59,969 |
| Sexes Combined | Percent of Sample Number in Catch | 0.6 630 | 3.1 3,305 | 69.6 74,294 | 0.6 630 | 11.2 11,962 | 14.9 15,897 | 0.0 0 | 0.0 0 | 100.0 106,718 |
| Week(s) 27-28: 26 June - 09 July | | | | | | | | | | |
| Sample Dates: 04 July - 06 July | | | | | | | | | | |
| Sample Size: 609 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 1.3 1,215 | 25.9 23,997 | 1.6 1,519 | 0.7 608 | 17.1 15,796 | 0.0 0 | 0.0 0 | 46.6 43,134 |
| Females | Percent of Sample Number in Catch | 0.5 455 | 2.3 2,126 | 32.0 29,617 | 1.2 1,063 | 3.0 2,734 | 14.4 13,365 | 0.0 0 | 0.0 0 | 53.4 49,361 |
| Sexes Combined | Percent of Sample Number in Catch | 0.5 455 | 3.6 3,341 | 57.9 53,614 | 2.8 2,582 | 3.7 3,342 | 31.5 29,161 | 0.0 0 | 0.0 0 | 100.0 92,495 |

Table 13. (Continued)

| | | Brood Year and Age Group | | | | | | | | |
|-----------------------------------|--------------------------------------|--------------------------|--------|---------|-------|--------|---------|------|-----|---------|
| | | 1977 | | 1978 | | | | 1980 | | |
| | | 1.4 | 2.3 | 1.3 | 2.2 | 0.3 | 1.2 | 2.1 | 0.2 | Total |
| Week(s) 29-39: 11 July - 24 Sept. | | | | | | | | | | |
| Sample Dates: 07 July - 20 July | | | | | | | | | | |
| Sample Size: 522 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 | 2.1 | 29.5 | 1.1 | 0.6 | 15.7 | 0.2 | 0.0 | 49.2 |
| | | 0 | 2,100 | 29,405 | 1,147 | 573 | 15,657 | 191 | 0 | 49,073 |
| Females | Percent of Sample Number in Catch | 0.2 | 3.3 | 29.5 | 1.9 | 0.8 | 15.1 | 0.0 | 0.0 | 50.8 |
| | | 191 | 3,246 | 29,405 | 1,909 | 764 | 15,085 | 0 | 0 | 50,600 |
| Sexes Combined | Percent of Sample Number in Catch | 0.2 | 5.4 | 59.0 | 3.0 | 1.4 | 30.8 | 0.2 | 0.0 | 100.0 |
| | | 191 | 5,346 | 58,810 | 3,056 | 1,337 | 30,742 | 191 | 0 | 99,673 |
| All Weeks Combined 21-39 1/ | | | | | | | | | | |
| Sample Dates: 15 May - 20 July | | | | | | | | | | |
| Sample Size: 5,620 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.1 | 5.7 | 27.0 | 0.6 | 2.8 | 8.7 | 0.0 | 0.1 | 45.0 |
| | | 673 | 36,281 | 170,716 | 4,046 | 17,612 | 54,835 | 191 | 430 | 284,784 |
| Females | Percent of Sample Number in Catch | 0.1 | 7.7 | 35.1 | 0.8 | 3.9 | 7.3 | 0.0 | 0.1 | 55.0 |
| | | 757 | 48,842 | 222,089 | 5,279 | 24,588 | 46,344 | 0 | 327 | 348,226 |
| Sexes Combined | Percent of Sample Number in Catch | 0.2 | 13.4 | 62.1 | 1.4 | 6.7 | 16.0 | 0.0 | 0.2 | 100.0 |
| | | 1,430 | 85,123 | 392,805 | 9,325 | 42,200 | 101,179 | 191 | 757 | 633,010 |

1/ Numbers in the catch by sex and age for all weeks combined are the sums of the catches by sex and age in all strata (weeks) and the percentages for each sex and age class in the season total are calculated from these sums.

Table 14. Estimated age and sex composition of the commercial catches of chinook salmon in the Copper River District, by calendar week, 1983.

| | | Brood Year and Age Group | | | | | | | | | | Total | | | | |
|--|--------------------------------------|--------------------------|-----------|---------------|-----------|---------------|-----------|------------|-----------|-----------------|-----|-------|------|--|------|--|
| | | 1976 | | 1977 | | | | | | 1978 | | | 1979 | | 1980 | |
| | | 1.5 | 2.4 | 1.4 | 2.3 | 1.3 | 2.2 | 1.2 | 1.1 | 1.2 | 1.1 | | | | | |
| Week (s) 21: 15 May - 21 May Sample Dates: 16 May - 17 May Sample Size: 630 | | | | | | | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 0.3 31 | 27.9 2,744 | 0.0 0 | 21.6 2,120 | 0.0 0 | 2.1 203 | 0.0 0 | 51.9 5,098 | | | | | | |
| Females | Percent of Sample Number in Catch | 0.2 16 | 0.2 16 | 19.0 1,871 | 0.0 0 | 28.1 2,760 | 0.0 0 | 0.6 62 | 0.0 0 | 48.1 4,724 | | | | | | |
| Sexes Combined | Percent of Sample Number in Catch | 0.2 16 | 0.5 47 | 46.9 4,615 | 0.0 0 | 49.7 4,880 | 0.0 0 | 2.7 265 | 0.0 0 | 100.0 9,822 | | | | | | |
| Week (s) 22: 22 May - 28 May Sample Dates: 23 May - 24 May Sample Size: 628 | | | | | | | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 0.0 0 | 20.0 2,793 | 0.2 22 | 27.2 3,790 | 0.0 0 | 2.7 377 | 0.2 22 | 50.3 7,004 | | | | | | |
| Females | Percent of Sample Number in Catch | 0.0 0 | 0.0 0 | 12.7 1,773 | 0.2 22 | 36.6 5,098 | 0.0 0 | 0.2 22 | 0.0 0 | 49.7 6,915 | | | | | | |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 0 | 0.0 0 | 32.7 4,566 | 0.4 44 | 63.8 8,888 | 0.0 0 | 2.9 399 | 0.2 22 | 100.0 13,919 | | | | | | |
| Week (s) 23: 29 May - 04 Jun. Sample Dates: 30 May - 31 May Sample Size: 661 | | | | | | | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 0.0 0 | 13.1 1,606 | 0.0 0 | 28.0 3,415 | 0.2 18 | 3.6 443 | 0.0 0 | 44.9 5,482 | | | | | | |
| Females | Percent of Sample Number in Catch | 0.0 0 | 0.2 18 | 11.6 1,421 | 0.2 18 | 42.3 5,169 | 0.0 0 | 0.8 92 | 0.0 0 | 55.1 6,718 | | | | | | |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 0 | 0.2 18 | 24.7 3,027 | 0.2 18 | 70.3 8,584 | 0.2 18 | 4.4 535 | 0.0 0 | 100.0 12,200 | | | | | | |

Table 14. (Continued)

| | Brood Year and Age Group | | | | | | | | | | Total |
|--|--------------------------|-----|--------|-----|--------|-----|-------|-----|------|--------|--------|
| | 1976 | | 1977 | | | | 1978 | | 1979 | | |
| | 1.5 | 2.4 | 1.4 | 2.3 | 1.3 | 2.2 | 1.2 | 1.1 | | | |
| Week (s) 24: 05 June - 11 Jun. Sample Dates: 06 June - 08 Jun. Sample Size: 643 | | | | | | | | | | | |
| Males | 0.0 | 0.2 | 14.6 | 0.2 | 28.4 | 0.0 | 4.8 | 0.0 | 0.0 | 48.2 | 48.2 |
| | 0 | 16 | 1,463 | 16 | 2,848 | 0 | 483 | 0 | 0 | 4,826 | 4,826 |
| Females | 0.0 | 0.0 | 10.1 | 0.0 | 40.3 | 0.0 | 1.4 | 0.0 | 0.0 | 51.8 | 51.8 |
| | 0 | 0 | 1,012 | 0 | 4,032 | 0 | 140 | 0 | 0 | 5,184 | 5,184 |
| Sexes Combined | 0.0 | 0.2 | 24.7 | 0.2 | 68.7 | 0.0 | 6.2 | 0.0 | 0.0 | 100.0 | 100.0 |
| | 0 | 16 | 2,475 | 16 | 6,880 | 0 | 623 | 0 | 0 | 10,010 | 10,010 |
| Week (s) 25-35: 12 June - 27 Aug. Sample Dates: 12 June - 15 Jun. Sample Size: 603 | | | | | | | | | | | |
| Males | 0.0 | 0.0 | 17.7 | 0.0 | 29.5 | 0.0 | 2.2 | 0.0 | 0.0 | 49.4 | 49.4 |
| | 0 | 0 | 722 | 0 | 1,201 | 0 | 88 | 0 | 0 | 2,011 | 2,011 |
| Females | 0.0 | 0.0 | 14.1 | 0.0 | 36.0 | 0.0 | 0.5 | 0.0 | 0.0 | 50.6 | 50.6 |
| | 0 | 0 | 574 | 0 | 1,465 | 0 | 20 | 0 | 0 | 2,059 | 2,059 |
| Sexes Combined | 0.0 | 0.0 | 31.8 | 0.0 | 65.5 | 0.0 | 2.7 | 0.0 | 0.0 | 100.0 | 100.0 |
| | 0 | 0 | 1,296 | 0 | 2,666 | 0 | 108 | 0 | 0 | 4,070 | 4,070 |
| All Weeks Combined 21-35 1/ Sample Dates: 15 May - 08 Jun. Sample Size: 3,165 | | | | | | | | | | | |
| Males | 0.0 | 0.1 | 18.6 | 0.1 | 26.7 | 0.1 | 3.1 | 0.1 | 0.1 | 48.8 | 48.8 |
| | 0 | 47 | 9,328 | 38 | 13,375 | 18 | 1,593 | 22 | 22 | 24,421 | 24,421 |
| Females | 0.1 | 0.1 | 13.3 | 0.1 | 37.0 | 0.0 | 0.6 | 0.0 | 0.0 | 51.2 | 51.2 |
| | 16 | 34 | 6,651 | 40 | 18,522 | 0 | 337 | 0 | 0 | 25,600 | 25,600 |
| Sexes Combined | 0.1 | 0.2 | 31.9 | 0.2 | 63.7 | 0.1 | 3.7 | 0.1 | 0.1 | 100.0 | 100.0 |
| | 16 | 81 | 15,979 | 78 | 31,897 | 18 | 1,930 | 22 | 22 | 50,021 | 50,021 |

1/ Numbers in the catch by sex and age for all weeks combined are the sums of the catches by sex and age in all strata (weeks) and the percentages for each sex and age class in the season total are calculated from these sums.

Table 15. Estimated age and sex composition of the commercial catches of coho salmon in the Copper River District, by calendar week, 1983.

| | | Brood year and Age Group | | | | Total |
|------------------------------------|--------------------------------------|--------------------------|----------------|----------------|----------------|------------------|
| | | 1977 | 1978 | 1979 | 1980 | |
| | | 4.1 | 3.1 | 2.1 | 1.1 | |
| <hr/> | | | | | | |
| Week (s) 24-33: 05 Jun - 13 Aug 1/ | | | | | | |
| Sample Dates: 08 Aug - 11 Aug | | | | | | |
| Sample Size: 448 | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 | 7.8 2,791 | 38.2 13,793 | 15.2 5,422 | 61.6 22,006 |
| Females | Percent of Sample Number in Catch | 0.0 | 2.2 797 | 26.1 9,329 | 10.1 3,588 | 38.4 13,714 |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 | 10.0 3,588 | 64.7 23,122 | 25.3 9,010 | 100.0 35,720 |
| <hr/> | | | | | | |
| Week (s) 34-35: 14 Aug - 27 Aug | | | | | | |
| Sample Dates: 15 Aug - 18 Aug | | | | | | |
| Sample Size: 427 | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 | 2.6 2,636 | 31.3 32,117 | 15.5 15,819 | 49.4 50,572 |
| Females | Percent of Sample Number in Catch | 0.0 | 2.1 2,157 | 29.3 29,960 | 19.2 19,654 | 50.6 51,771 |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 | 4.7 4,793 | 60.6 62,077 | 34.7 35,473 | 100.0 102,343 |
| <hr/> | | | | | | |
| Week (s) 36-42: 28 Aug - 15 Oct | | | | | | |
| Sample Dates: 29 Aug - 01 Sep | | | | | | |
| Sample Size: 363 | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 | 7.7 7,419 | 35.5 34,180 | 10.5 10,068 | 53.7 51,667 |
| Females | Percent of Sample Number in Catch | 0.3 265 | 5.2 5,034 | 10.3 29,146 | 10.5 10,068 | 46.3 44,513 |
| Sexes Combined | Percent of Sample Number in Catch | 0.3 265 | 12.9 12,453 | 65.8 63,325 | 21.0 20,136 | 100.0 96,180 |

Table 15. (Continued)

| | 1977 | Brood Year and Age Group | | | Total |
|-------------------------------|------|--------------------------|---------|--------|---------|
| | | 1978 | 1979 | 1980 | |
| | 4.1 | 3.1 | 2.1 | 1.1 | |
| All Weeks: 28 Aug - 15 Oct 2/ | | | | | |
| Sample Dates: 08 Aug - 11 Aug | | | | | |
| Sample Size: 1,238 | | | | | |
| Males | 0.0 | 5.5 | 34.2 | 13.4 | 53.1 |
| Percent of Sample | | | | | |
| Number in Catch | 0 | 12,846 | 80,090 | 31,309 | 124,245 |
| Females | 0.1 | 3.4 | 29.2 | 14.2 | 46.9 |
| Percent of Sample | | | | | |
| Number in Catch | 265 | 7,988 | 68,435 | 33,310 | 109,998 |
| Sexes Combined | 0.1 | 8.9 | 63.4 | 27.6 | 100.0 |
| Percent of Sample | | | | | |
| Number in Catch | 265 | 20,834 | 148,525 | 64,619 | 234,243 |

1/ Catches prior to the week starting 7 August (week 33) were small incidental catches in the sockeye fishery.

2/ The estimated numbers for all weeks are weighted by the estimated numbers from the three weekly strata.

Table 16. Estimated age and sex composition of the commercial catches of sockeye salmon in the Bering River-Controller Bay subdistrict(s), Kayak Island subdistrict, and the Bering River district combined.

Bering River-Controller Bay subdistrict (s)

| | Brood Year and Age Group | | | | | | | | | |
|--------------------------------|--------------------------|-----|-------|--------|------|------|-------|------|------|--------|
| | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
| | 1.5 | 1.4 | 1.4 | 2.3 | 0.4 | 1.3 | 2.2 | 0.3 | 1.2 | 1.1 |
| Weeks Combined 12 Jun - 24 Sep | | | | | | | | | | TOTAL |
| Sample Dates: 12 Jun - 15 Jun | | | | | | | | | | |
| Sample Size : 451 | | | | | | | | | | |
| Males | 0.0 | 0.2 | 0.2 | 3.5 | 0 | 26.4 | 0.7 | 5.8 | 10.4 | 0.2 |
| Percent of Sample | | | | | | | | | | |
| Number in Catch | 0 | 72 | 1,159 | 8,625 | 0.0 | 217 | 1,884 | 290 | 72 | 48.1 |
| Females | 0.0 | 0.0 | 0.0 | 4.2 | 0 | 32.8 | 0.4 | 7.5 | 6.7 | 0.0 |
| Percent of Sample | | | | | | | | | | |
| Number in Catch | 0 | 0 | 1,377 | 10,725 | 0.0 | 145 | 2,464 | 72 | 0 | 51.9 |
| Sexes Combined | 0.0 | 0.2 | 0.2 | 7.7 | 0 | 59.2 | 1.1 | 13.3 | 17.1 | 0.2 |
| Percent of Sample | | | | | | | | | | |
| Number in Catch | 0 | 72 | 2,536 | 19,350 | 0.0 | 362 | 4,348 | 362 | 72 | 100.0 |
| | | | | | | | | | | 32,682 |

Kayak Island subdistrict

| | Brood Year and Age Group | | | | | | | | | |
|------------------------------------|--------------------------|-----|-------|---------|--------|-------|--------|-----|--------|---------|
| | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
| | 1.5 | 1.4 | 1.4 | 2.3 | 0.4 | 1.3 | 2.2 | 0.3 | 1.2 | 1.1 |
| Weeks Combined: 12 Jun - 30 Jul 1/ | | | | | | | | | | Total |
| Sample Dates: 12 Jun - 16 Jul | | | | | | | | | | |
| Sample Size: 2,859 | | | | | | | | | | |
| Males | 0.0 | 0.2 | 0.2 | 2.5 | 0.0 2/ | 31.6 | 1.8 | 3.0 | 9.7 | 0.0 |
| Percent of Sample | | | | | | | | | | |
| Number in Catch | 0 | 223 | 3,685 | 46,315 | 64 | 2,599 | 4,464 | 106 | 71,702 | 0 |
| Females | 0.0 2/ | 0.3 | 0.3 | 2.7 | 0.0 | 36.9 | 0.8 | 3.8 | 6.6 | 0.0 2/ |
| Percent of Sample | | | | | | | | | | |
| Number in Catch | 60 | 363 | 3,933 | 54,079 | 0 | 1,226 | 5,546 | 20 | 9,662 | 0 |
| Sexes Combined | 0.0 | 0.5 | 0.5 | 5.2 | 0.0 2/ | 68.5 | 2.6 | 6.8 | 16.3 | 0.0 |
| Percent of Sample | | | | | | | | | | |
| Number in Catch | 60 | 596 | 7,618 | 100,394 | 64 | 3,825 | 10,010 | 146 | 23,908 | 0 |
| | | | | | | | | | | 146,591 |

Table 16. (Continued)

Bering River District (Subdistricts combined)

| | 1976 | | 1977 | | Brood Year and Age Group 1978 | | | | 1979 | | 1980 | | Total |
|---|--------------|------------|---------------|--------------|----------------------------------|--------------|---------------|----------------|------------|--------------|------------------|--|-------|
| | 1.5 | 1.4 | 1.4 | 2.3 | 0.4 | 1.3 | 2.2 | 0.3 | 1.2 | 0.2 | 1.1 | | |
| Weeks Combined: 12 Jun - 30 Jul 1/ Sample Dates: 12 Jun - 16 Jul Sample Size: 2,859 | | | | | | | | | | | | | |
| Males | 0.0 0 | 0.2 296 | 2.7 4,844 | 0.0 2/ 64 | 30.7 54,940 | 1.6 2,815 | 2.7 4,844 | 9.9 17,652 | 0.2 396 | 0.0 2/ 72 | 48.8 87,426 | | |
| Females | 0.0 2/ 60 | 0.2 363 | 2.9 5,309 | 0.0 0 | 36.2 64,803 | 0.7 1,372 | 4.5 8,010 | 6.6 11,837 | 0.1 92 | 0.0 0 | 51.2 91,846 | | |
| Sexes Combined | 0.0 2/ 60 | 0.4 659 | 5.6 10,153 | 0.0 2/ 64 | 66.9 119,743 | 2.3 4,187 | 8.0 14,358 | 16.5 29,489 | 0.3 488 | 0.0 2/ 72 | 100.0 179,273 | | |

1/ Weighted by weekly catches by sex and age.

2/ Less than 0.05% of the total catch.

Table 17. Estimated age and sex composition of the commercial catches of coho salmon in the Bering River-Controller Bay subdistricts, Kayak Island subdistrict, and the Bering River district combined.

| Bering River-Controller Bay subdistrict(s) | | | | | | | | | |
|--|--------------------------------------|-----------|----------------|--------------------------|----------------|----------------|-----------------|-----|-------|
| | | | | Brood Year and Age Group | | | | | Total |
| | | | | 1977 | 1978 | 1979 | 1980 | | |
| All Weeks: | 07 Aug - 01 Oct | | | 4.1 | 3.1 | 2.2 | 2.1 | 1.1 | |
| Sample Dates: | 22 Aug - 09 Sep | | | | | | | | |
| Sample Size: | 527 | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.1 84 | 8.4 7,705 | 0.0 0 | 33.0 30,258 | 8.7 7,933 | 50.2 45,980 | | |
| Females | Percent of Sample Number in Catch | 0.0 0 | 6.4 5,909 | 0.6 539 | 34.5 31,553 | 8.3 7,585 | 49.8 45,586 | | |
| Sexes Combined | Percent of Sample Number in Catch | 0.1 84 | 14.8 13,614 | 0.6 539 | 67.5 61,811 | 17.0 15,518 | 100.0 91,566 | | |

| Kayak Island subdistrict | | | | | | | | | |
|--------------------------|--------------------------------------|----------|--------------|--------------------------|----------------|---------------|-----------------|-----|-------|
| | | | | Brood Year and Age Group | | | | | Total |
| | | | | 1977 | 1978 | 1979 | 1980 | | |
| All Weeks: | 12 Jun - 30 Jul | | | 4.1 | 3.1 | 2.2 | 2.1 | 1.1 | |
| Sample Dates: | 04 Jul - 13 Jul | | | | | | | | |
| Sample Size: | 798 | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.0 0 | 3.1 801 | 0.0 0 | 25.2 6,573 | 12.9 3,374 | 41.2 10,748 | | |
| Females | Percent of Sample Number in Catch | 0.0 0 | 4.1 1,067 | 0.0 0 | 32.8 8,569 | 21.9 5,719 | 58.8 15,355 | | |
| Sexes Combined | Percent of Sample Number in Catch | 0.0 0 | 7.2 1,868 | 0.0 0 | 58.0 15,142 | 34.8 9,093 | 100.0 26,103 | | |

Table 17.(Continued)

Bering River district combined

| | | Brood Year and Age Group | | | | | Total |
|-------------------|--------------------------------------|--------------------------|----------------|------------|----------------|----------------|------------------|
| | | 1977 | 1978 | | | 1979 | |
| | | 4.1 | 3.1 | 2.2 | 2.1 | 1.1 | |
| All Weeks: | 12 Jun - 01 Oct | | | | | | |
| Sample Dates: | 04 Jul - 09 Sep | | | | | | |
| Sample Size: | 527 | | | | | | |
| Males | Percent of Sample Number in Catch | 0.1 84 | 7.2 8,506 | 0.0 0 | 31.3 36,831 | 9.6 11,307 | 48.2 56,728 |
| Females | Percent of Sample Number in Catch | 0.0 0 | 5.9 6,976 | 0.5 539 | 34.1 40,122 | 11.3 13,304 | 51.8 60,941 |
| Sexes Combined | Percent of Sample Number in Catch | 0.1 84 | 13.1 15,482 | 0.5 539 | 65.4 76,953 | 20.9 24,611 | 100.0 117,669 |

1/ The estimates for Subdistricts 10 and 20 combined, and Subdistrict 30 are weighted by the estimates of catches by age and sex in the weekly catches for those districts. The estimates for all Subdistricts combined in the weighted sum of the separate subdistrict estimates for all weeks.

2/ Approximately 3,000 fish in this strata were actually incidental catches in the sockeye fishery prior to the traditional coho salmon season which began in the second week of August.

3/ In Subdistrict 30 the coho salmon catches were all incidental catches in a sockeye salmon fishery which occurred prior to the traditional coho salmon season which began in the second week of August.

Table 18. Prince William Sound Area subsistence fishery, 1983.

| Area | Number Permits Issued | Type of Gear | King | Sockeye | Coho | Other ² | Total |
|-----------------------------------|-----------------------------|--------------------|-------|---------|-------|--------------------|---------|
| Upper Copper River ¹ | 6,911 | Dip Net | 4,255 | 66,620 | 1,281 | 101 | 72,257 |
| Upper Copper River ¹ | 630 | Fishwheel | 1,166 | 34,375 | 409 | 21 | 35,971 |
| Copper River Flats ³ | 87 | Gill Net | 79 | 101 | 57 | 5 | 242 |
| Prince William Sound ⁴ | 26 | Gill Net | | 22 | 36 | 88 | 146 |
| Total | 7,654 | | 5,481 | 101,713 | 1,801 | 178 | 109,173 |

¹Compiled from reports received through 1/19/84.

²Includes pink and chum salmon, whitefish, steelhead, cutthroat, Dolly Varden, lamprey, lingcod and grayling.

³Catch from 26 fishermen; 41 did not fish; 17 permits were not returned; and 3 fishermen were unsuccessful.

⁴Catch from 12 fishermen; 5 permits were not returned; 9 did not fish.

Table 19. Copper River Delta gill net salmon subsistence catch and effort, 1960 - 1983.

| Year | P E R M I T S | | | | | C A T C H | | | |
|------|---------------|-----------|--------------|------------|-----------|-----------|---------|------|------------------|
| | Issued | Unused | Returned | | Total | King | Sockeye | Coho | Total |
| | | | Unsuccessful | Successful | | | | | |
| 1960 | 13 | No Record | No Record | Unknown | No Record | | | 158 | 158 |
| 1961 | 14 | " | " | " | 14 | 60 | 137 | 99 | 296 |
| 1962 | 14 | " | " | " | No Record | 44 | 135 | 3 | 182 |
| 1963 | 8 | 0 | 2 | 6 | 8 | 3 | 13 | 157 | 173 |
| 1964 | 5 | 2 | | | 3 | 14 | | | 14 |
| 1965 | 31 | 5 | 2 | 13 | 20 | 12 | 459 | 85 | 556 |
| 1966 | 45 | 10 | 2 | 19 | 31 | 47 | 175 | | 222 |
| 1967 | 61 | 19 | 9 | 28 | 56 | 83 | 153 | | 236 |
| 1968 | 17 | 8 | 1 | 6 | 15 | 11 | 36 | | 47 |
| 1969 | 49 | 13 | 7 | 13 | 33 | 16 | 63 | 85 | 164 |
| 1970 | 32 | 3 | 1 | 23 | 27 | 66 | 179 | | 245 |
| 1971 | 29 | 9 | 12 | 5 | 26 | 10 | 32 | 4 | 46 |
| 1972 | 104 | 5 | | 75 | 80 | 149 | 569 | 53 | 771 |
| 1973 | 94 | | | 89 | 89 | 153 | 326 | 180 | 659 |
| 1974 | 9 | 2 | 2 | 1 | 5 | 5 | 4 | 2 | 11 |
| 1975 | 2 | | | 2 | 2 | 0 | 5 | 0 | 5 |
| 1976 | 27 | | | 14 | 14 | 1 | 10 | 0 | 11 |
| 1977 | 23 | | | 22 | 22 | 10 | 71 | 0 | 81 |
| 1978 | 34 | 19 | | 9 | 28 | 37 | 18 | 12 | 67 |
| 1979 | 49 | 20 | 4 | 17 | 41 | 45 | 26 | 17 | 88 |
| 1980 | 39 | 17 | 6 | 12 | 35 | 19 | 27 | 17 | 63 |
| 1981 | 72 | 21 | 4 | 26 | 51 | 48 | 145 | 104 | 297 |
| 1982 | 108 | 42 | 3 | 45 | 90 | 60 | 634 | 106 | 802 ¹ |
| 1983 | 87 | 41 | 3 | 26 | 70 | 79 | 101 | 57 | 242 ² |

¹ Includes 1 pink and 1 chum.

² Includes 5 pinks.

Table 20. Prince William Sound salmon subsistence catch and effort, 1960 - 1983¹.

| Year | P E R M I T S | | C A T C H | | | | | | Total |
|------|---------------|----------|-----------|---------|------|-------|------|----------------------|-------|
| | Issued | Returned | King | Sockeye | Coho | Pink | Chum | Unknown ² | |
| 1960 | 50 | | | 139 | 505 | 1,292 | 75 | 150 | 2,161 |
| 1961 | 12 | | 1 | 41 | 123 | 732 | 3 | | 900 |
| 1962 | 9 | | | | 119 | 214 | 142 | | 475 |
| 1963 | 9 | | 3 | | 406 | 298 | 24 | | 731 |
| 1964 | 15 | | | 11 | | 900 | | | 911 |
| 1965 | 22 | 16 | | | | 179 | 25 | | 204 |
| 1966 | 3 | 3 | | 3 | 19 | 20 | 50 | | 92 |
| 1967 | 4 | 3 | | | 4 | 4 | | | 8 |
| 1968 | 4 | 3 | | | 20 | 156 | | 22 | 198 |
| 1969 | 7 | 3 | | | 16 | | | | 16 |
| 1970 | 1 | 1 | | | | | | | 0 |
| 1971 | 3 | 2 | | | | 46 | | | 46 |
| 1972 | 0 | | | | | | | | |
| 1973 | 19 | 16 | | | 289 | | | | 289 |
| 1974 | 3 | 1 | | | | | | | 0 |
| 1975 | 2 | 0 | | | | | | | 0 |
| 1976 | 0 | | | | | | | | 0 |
| 1977 | 4 | 4 | | | | | | | 0 |
| 1978 | 3 | 2 | | | | | | | 0 |
| 1979 | 15 | 2 | | | | | | | 0 |
| 1980 | 26 | 15 | | 7 | 6 | | | | 13 |
| 1981 | 12 | 8 | | 3 | 29 | | 2 | | 34 |
| 1982 | 35 | 27 | | 84 | 4 | 31 | 24 | | 143 |
| 1983 | 26 | 21 | | 22 | 36 | 9 | 79 | | 146 |

¹ Includes only catches from Prince William Sound proper.

² Catches not reported by species.

Table 21. Copper River subsistence fishery data, 1948 - 1983.

| Year | Reported Catch | | Permits Issued | | Reported Catch by Species | | | | Estimated |
|------|----------------|-----------|----------------|------------------|---------------------------|---------|---------|------------------|----------------------|
| | Dip Net | Fishwheel | Dip Net | Fishwheel | Total | Sockeye | Chinook | Coho | Total Catch |
| 1948 | 5,100 | | | | | | | | |
| 1949 | 5,500 | | | | | 1,601 | 535 | | |
| 1952 | 2,136 | | | | | 3,057 | 88 | | |
| 1954 | 3,145 | | | | | 1,767 | 319 | | |
| 1955 | 2,086 | | | | | 7,241 | 281 | 108 | |
| 1957 | 7,753 | | | | | 12,909 | 354 | | |
| 1958 | 13,263 | | | | | | | | |
| 1960 | 1,179 | 5,660 | 44 | 33 | 77 | 6,739 | 136 | 25 | 8,803 |
| 1961 | 1,777 | 12,419 | 307 | 82 | 389 | 15,472 | 388 | 550 | 18,206 |
| 1962 | 3,203 | 11,101 | 435 | 117 | 552 | 14,543 | 848 | 381 | 18,486 |
| 1963 | 2,124 | 12,395 | 361 | 140 | 501 | 14,055 | 464 | 558 | 18,287 |
| 1964 | 4,133 | 7,749 | 794 | 200 | 994 | 11,915 | 725 | 103 | 16,340 |
| 1965 | 7,215 | 5,813 | 982 | 143 | 1,125 | 12,760 | 644 | 52 | 16,818 |
| 1966 | 7,452 | 9,188 | 1,132 | 138 | 1,270 | 16,718 | 555 | | 21,896 |
| 1967 | 6,146 | 8,360 | 1,166 | 154 | 1,320 | 14,457 | 419 | | 19,007 |
| 1968 | 8,040 | 6,071 | 1,235 | 143 | 1,378 | 14,819 | 644 | | 20,283 |
| 1969 | 18,054 | 6,220 | 1,415 | 167 | 1,582 | 27,604 | 719 | 224 | 29,266 |
| 1970 | 22,700 | 9,886 | 3,220 | 267 | 3,487 | 36,500 | 427 | 554 | 42,757 |
| 1971 | 28,115 | 9,370 | 4,168 | 374 ¹ | 4,542 | 37,517 | 1,363 | 363 | 48,449 |
| 1972 | 18,996 | 7,854 | 3,485 | 205 | 3,690 | 26,850 | 1,501 | 248 ² | 32,468 ² |
| 1973 | 16,407 | 10,943 | 3,840 | 305 | 4,145 | 27,350 | 1,846 | 51 ³ | 29,428 ³ |
| 1974 | 15,143 | 7,657 | 3,305 | 288 | 3,593 | 22,800 | 1,141 | 163 ⁴ | 26,001 ⁴ |
| 1975 | 7,694 | 5,626 | 2,452 | 350 | 2,802 | 13,320 | 1,705 | | 15,357 |
| 1976 | 12,130 | 8,321 | 2,512 | 451 | 2,963 | 20,451 | 2,017 | 17 | 23,623 |
| 1977 | 22,612 | 12,751 | 3,526 | 540 | 4,066 | 35,363 | 2,171 | 454 | 41,815 |
| 1978 | 12,569 | 6,638 | 3,313 | 392 | 3,705 | 19,207 | 2,050 | 633 | 22,029 |
| 1979 | 11,887 | 10,251 | 2,730 | 470 | 3,200 | 22,138 | 2,372 | 705 | 30,963 |
| 1980 | 14,650 | 9,805 | 2,804 | 399 | 3,203 | 21,437 | 2,256 | 639 | 35,081 |
| 1981 | 28,872 | 26,924 | 3,555 | 523 | 4,078 | 53,008 | 1,913 | 849 | 68,746 |
| 1982 | 62,614 | 38,120 | 5,475 | 615 | 6,090 | 96,799 | 2,532 | 1,246 | 110,006 ⁵ |
| 1983 | 72,257 | 35,971 | 6,911 | 630 | 7,541 | 100,995 | 5,421 | 1,690 | 118,728 ⁶ |

¹ Last use of Dip Net/Fishwheel combination permits..

² First issue of permits at Chitina.

³ "Blacklist" used.

⁴ e of permits at Chitina and Glennallen only.

⁵ Return requirement enforced

⁶ Through 1/19/84

Table 22. Commercial salmon catch by period and species, Bering River district, 1983.

| Dates | Fishing Time (Hrs.) | Effort | Catch by Species | | | | | Total |
|-----------|---------------------|--------|------------------|---------|---------|------|-------|---------|
| | | | King | Sockeye | Coho | Pink | Chum | |
| 6/12-6/15 | 60 | 104 | 219 | 27,792 | 26 | 16 | 814 | 28,867 |
| 6/20-6/21 | 36 | 57 | 68 | 17,277 | 123 | 1 | 418 | 17,887 |
| 6/23-6/25 | 36 | 62 | 60 | 17,973 | 746 | 20 | 899 | 19,698 |
| 6/27-6/29 | 48 | 67 | 51 | 28,038 | 8,299 | 52 | 1,188 | 37,628 |
| 6/30-7/ 2 | 36 | 75 | 16 | 12,468 | 3,950 | 48 | 524 | 17,006 |
| 7/ 4-7/ 6 | 48 | 71 | 53 | 26,882 | 4,086 | 106 | 323 | 31,450 |
| 7/ 9-7/10 | 36 | 64 | 13 | 12,438 | 2,380 | 119 | 117 | 15,067 |
| 7/11-7/13 | 48 | 72 | 46 | 16,286 | 3,921 | 86 | 150 | 20,489 |
| 7/14-7/16 | 36 | 49 | 40 | 11,990 | 1,941 | 144 | 41 | 14,156 |
| 7/18-7/20 | 48 | 30 | 12 | 6,642 | 1,714 | 221 | 133 | 8,722 |
| 7/21-7/23 | 36 | 9 | 17 | 405 | 180 | 29 | 8 | 639 |
| 7/25-7/27 | 48 | 2 | 0 | 60 | 1 | 3 | 0 | 64 |
| 7/28-7/30 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8/ 1-8/ 3 | 48 | 2 | 15 | 77 | 132 | 0 | 0 | 224 |
| 8/ 4-8/ 6 | 36 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8/ 8-8/11 | 84 | 2 | 0 | 11 | 321 | 0 | 0 | 332 |
| 8/15-8/18 | 84 | 8 | 0 | 902 | 1,326 | 0 | 0 | 2,228 |
| 8/22-8/25 | 84 | 21 | 0 | 24 | 12,259 | 6 | 0 | 12,289 |
| 8/29-9/ 1 | 84 | 66 | 0 | 7 | 20,178 | 0 | 0 | 20,185 |
| 9/ 5-9/ 8 | 84 | 87 | 0 | 0 | 26,510 | 0 | 0 | 26,510 |
| 9/12-9/15 | 84 | 63 | 0 | 0 | 25,176 | 0 | 0 | 25,176 |
| 9/19-9/22 | 84 | 40 | 0 | 1 | 4,360 | 0 | 0 | 4,361 |
| 9/26-9/29 | 84 | 4 | 0 | 0 | 40 | 0 | 0 | 40 |
| Total | | | 610 | 179,273 | 117,669 | 851 | 4,615 | 303,018 |

Table 23. Bering River district salmon catch by species, 1974-1983.

| Catch by Species | | | | | | |
|----------------------|------|---------|---------|-------|--------|---------|
| Year | King | Sockeye | Coho | Pink | Chum | Total |
| 1974 | 32 | 4,208 | 28,615 | 7 | 2 | 32,864 |
| 1975 | 162 | 21,637 | 24,162 | 0 | 0 | 45,961 |
| 1976 | 228 | 30,908 | 42,423 | 43 | 1 | 73,603 |
| 1977 | 127 | 14,445 | 47,218 | 192 | 221 | 62,203 |
| 1978 | 331 | 33,554 | 91,097 | 266 | 2,391 | 127,639 |
| 1979 | 385 | 139,015 | 114,046 | 6,895 | 23,094 | 283,435 |
| 1980 | 0 | 0 | 108,872 | 0 | 0 | 108,872 |
| 1981 | 200 | 55,585 | 82,626 | 9,882 | 8,307 | 156,600 |
| 1982 ¹ | 254 | 131,645 | 144,931 | 47 | 333 | 277,210 |
| 1983 ¹ | 610 | 179,273 | 117,669 | 851 | 4,615 | 303,018 |
| Average ² | 233 | 61,026 | 80,165 | 1,818 | 3,896 | 147,139 |

¹ Preliminary

² Average of years fished. In 1980 the season did not open until August 11.

Table 24. Commercial salmon catch by species in the general purse seine districts, Prince William Sound, 1974-1983.¹

| Year | King | Sockeye | Coho | Pink | Chum | Total |
|----------------------|-------|---------|--------|------------|-----------|------------|
| 1974 ² | 1,215 | | 548 | 4 | | 1,767 |
| 1975 | 1,744 | 29,842 | 5,753 | 4,208,074 | 65,410 | 4,310,823 |
| 1976 | 855 | 43,888 | 6,070 | 2,897,535 | 250,424 | 3,198,772 |
| 1977 | 450 | 104,863 | 691 | 3,861,972 | 395,329 | 4,363,305 |
| 1978 | 340 | 9,177 | 1,392 | 2,660,290 | 354,839 | 3,026,038 |
| 1979 | 769 | 61,990 | 4,942 | 15,114,847 | 263,500 | 15,446,048 |
| 1980 | 82 | 126,463 | 1,830 | 13,300,729 | 407,891 | 13,836,995 |
| 1981 | 252 | 147,719 | 3,375 | 19,993,579 | 1,745,987 | 21,890,912 |
| 1982 ³ | 103 | 56,324 | 17,243 | 17,622,651 | 968,700 | 18,665,021 |
| 1983 ³ | 439 | 38,542 | 9,706 | 12,711,549 | 789,808 | 13,550,044 |
| Average ⁴ | 559 | 68,756 | 5,667 | 10,263,470 | 582,432 | 10,920,884 |

¹ Includes purse seine catches from the Eastern, Northern, Northwestern, Southwestern, Montague and Southeastern districts. Also includes troll catches during 1974-1976.

² Purse seine season closed. Catches were made by troll gear.

³ Preliminary

⁴ Average does not include 1974.

Table 25. Commercial salmon catch by species, by week in the general purse seine districts, Prince William Sound, 1983¹

| Period | Effort ² | Catch by Species | | | | | Total |
|-----------------------|---------------------|------------------|---------|-------|------------|---------|------------|
| | | King | Sockeye | Coho | Pink | Chum | |
| 7/7-8 ³ | 7 | 6 | 172 | 115 | 3,543 | 2,591 | 6,427 |
| 7/11-15 | 8 | 65 | 385 | 454 | 69,784 | 13,169 | 83,857 |
| 7/18-22 | 263 | 146 | 4,765 | 3,486 | 2,879,431 | 208,014 | 3,095,842 |
| 7/25-29 ⁴ | 266 | 133 | 6,385 | 1,515 | 3,429,430 | 217,452 | 3,654,915 |
| 8/1-5 | 265 | 80 | 7,697 | 1,261 | 3,028,137 | 133,558 | 3,170,733 |
| 8/8-12 ⁵ | 265 | 4 | 8,446 | 1,931 | 2,101,487 | 117,890 | 2,229,758 |
| 8/15-19 ⁶ | 216 | 5 | 8,103 | 883 | 1,065,675 | 96,575 | 1,171,241 |
| 8/22-26 | 58 | 0 | 2,589 | 61 | 134,062 | 559 | 137,271 |
| 8/29-9/2 ⁷ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 439 | 38,542 | 9,706 | 12,711,549 | 789,808 | 13,550,044 |

¹ Includes only common property fishery catches from the Eastern, Northern Northwestern, Southwestern, Montague and Southeastern districts.

² Effort was reduced until July 18 because of unresolved fish prices.

³ The season opened at 6 a.m. on Thursday July 7 in the Eastern, Northern, Northwestern and Southeastern districts for regular weekly periods from 6 a.m. Monday until 9 p.m. Friday. A special closure at the head of Wells Bay in the Northern district remained in effect through the end of the weekly fishing period on July 17.

⁴ All remaining purse seine districts opened with the start of the regular weekly period on July 25.

⁵ The Northern district, Coghill district and the eastern shore of Culross Island in the Northwestern district were closed for the season effective with the end of the weekly period at 9 p.m. on Friday, August 12.

⁶ The Eastern district was closed for the season effective with the end of the weekly period at 9 p.m. on Friday, August 12.

⁷ The Southwestern, Montague, Southeastern and the remainder of the Northwestern districts closed for the season effective with the end of the weekly period at 9 p.m. on Friday, September 2.

Table 26. Salmon harvests by species from private nonprofit hatcheries, Prince William Sound, 1978 - 1983.¹

| Year | Number Hatcheries | Catch by Species | | | Total |
|-------------------|-------------------|------------------|----------------------|------|-----------|
| | | Sockeye | Pink | Chum | |
| 1978 | 1 | | 133,648 | | 133,648 |
| 1979 | 1 | | 223,761 | | 223,761 |
| 1980 ² | 2 | | 346,928 ² | 6 | 346,934 |
| 1981 | 1 | 1 | 707,037 | 118 | 707,156 |
| 1982 ³ | 1 | | 1,356,918 | | 1,356,918 |
| 1983 ⁴ | 2 | | 765,924 | | 765,924 |
| TOTAL | 3 | 1 | 3,534,216 | 124 | 3,534,341 |

¹ Includes sales harvests of returns to Prince William Sound Aquaculture Corporation hatchery at Port San Juan, Evans Island; NERKA, Inc. hatchery at Perry Island and Valdez Fisheries Development Association hatchery at Solomon Gulch. Doesn't include estimates of common property interceptions.

² Includes 100 pink salmon harvested with set net gear at NERKA, Inc. hatchery at Perry Island.

³ Preliminary.

⁴ Includes harvests from both Port San Juan and Solomon Gulch hatcheries.

Table 27. Commercial salmon catch by all gear, by species, Prince William Sound, 1974 - 1983.¹

| Catch by Species | | | | | | |
|-------------------|-------|-----------|--------|------------|-----------|-------------------------|
| Year | King | Sockeye | Coho | Pink | Chum | Total |
| 1974 ² | 1,590 | 129,366 | 801 | 448,773 | 88,544 | 669,074 |
| 1975 | 2,519 | 189,613 | 6,142 | 4,452,805 | 100,479 | 4,751,558 |
| 1976 | 1,044 | 112,809 | 6,171 | 3,018,991 | 370,478 | 3,509,493 |
| 1977 | 648 | 310,358 | 843 | 4,513,082 | 572,610 | 5,397,541 |
| 1978 | 1,042 | 222,083 | 1,495 | 2,913,721 | 485,147 | 3,623,488 ³ |
| 1979 | 2,015 | 150,040 | 6,843 | 15,630,068 | 326,414 | 16,115,380 ⁴ |
| 1980 | 189 | 187,816 | 2,914 | 14,154,586 | 481,882 | 14,827,387 ⁶ |
| 1981 | 404 | 251,222 | 4,383 | 20,524,470 | 1,878,716 | 22,659,195 ⁷ |
| 1982 ⁵ | 216 | 1,047,419 | 17,445 | 20,293,549 | 1,345,288 | 22,703,917 ⁸ |
| 1983 ⁵ | 1,048 | 92,111 | 10,496 | 14,038,796 | 1,041,309 | 15,183,760 |
| 10 Year Average | 1,072 | 269,284 | 5,753 | 9,998,884 | 669,087 | 10,944,079 |

¹ Includes purse seine, drift gill net and set gill net catches from the general purse seine, Coghill, Unakwik and Eshamy districts in Prince William Sound proper. Also includes troll gear catches during 1974 - 1976.

² General Purse seine season closed.

³ Includes 133,648 pink salmon from hatchery harvests.

⁴ Includes 223,761 pink salmon from hatchery harvests.

⁵ Preliminary

⁶ Includes 356,828 pink salmon and 6 chum salmon from hatchery harvests.

⁷ Includes 707,037 pink, 118 chum and 1 sockeye salmon from hatchery harvests.

⁸ Includes 1,324,909 pink salmon from hatchery harvests.

⁹ Includes 686,963 fish from hatchery harvests.

Table 28. Pink and chum salmon returns to Prince William Sound, 1983¹

| Pink Salmon | | | | |
|------------------------|------------|-----------------------|----------------------|------------|
| District | Catch | Escapement Goal | Estimated Escapement | Total Run |
| Eastern | | 403,750 - 484,500 | 504,480 | |
| Northern | | 140,000 - 168,000 | 180,040 | |
| Northwestern & Coghill | | 262,500 - 315,000 | 521,010 | |
| Southwestern & Eshamy | | 112,500 - 135,000 | 182,520 | |
| Montague | | 106,250 - 127,500 | 247,260 | |
| Southeastern | | 225,000 - 270,000 | 634,890 | |
| TOTAL | 13,915,088 | 1,250,000 - 1,500,000 | 2,270,200 | 16,185,288 |
| Chum Salmon | | | | |
| District | Catch | Escapement Goal | Estimated Escapement | Total Run |
| Eastern | | 87,200 - 109,000 | 145,670 | |
| Northern | | 29,400 - 36,750 | 91,770 | |
| Northwestern & Coghill | | 48,600 - 60,750 | 95,850 | |
| Southwestern & Eshamy | | 3,400 - 4,250 | 3,700 | |
| Montague | | 11,400 - 14,250 | 0 | |
| Southeastern | | 20,000 - 25,000 | 22,900 | |
| TOTAL | 1,030,546 | 200,000 - 250,000 | 359,890 | 1,390,436 |

¹ Catches are preliminary and include 605,627 pink salmon from hatchery sales.

Table 29. Pink salmon runs, Prince William Sound, 1960 = 1983.

| Year | ESCAPEMENTS | | | | | | | Commercial Catch | Total Run |
|------|--------------|----------|---------|------------------------|--------------|--------------|-----------|---------------------------|------------|
| | Northwestern | | | | Southeastern | | | | |
| | Eastern | Northern | Coghill | Southwestern Eshamy | Montague | Southeastern | Total | | |
| 1960 | 475,073 | 133,653 | 203,575 | 155,788 | 214,987 | 167,747 | 1,350,823 | 1,841,896 | 3,192,719 |
| 61 | 706,790 | 123,900 | 448,180 | 133,990 | 289,290 | 496,830 | 2,198,980 | 2,298,218 | 4,497,198 |
| 62 | 650,300 | 253,490 | 417,190 | 107,950 | 317,360 | 271,720 | 2,018,010 | 6,742,316 | 8,760,326 |
| 63 | 378,050 | 77,760 | 354,230 | 49,760 | 78,750 | 417,190 | 1,355,740 | 5,295,378 | 6,651,118 |
| 64 | 485,470 | 349,010 | 353,030 | 172,800 | 121,220 | 360,150 | 1,841,680 | 4,206,896 | 6,048,576 |
| 1965 | 258,680 | 54,970 | 187,760 | 62,720 | 77,000 | 255,930 | 897,060 | 2,460,471 | 3,357,531 |
| 66 | 489,800 | 255,710 | 200,940 | 110,980 | 42,050 | 201,150 | 1,300,630 | 2,699,418 | 4,000,048 |
| 67 | 321,520 | 167,300 | 544,080 | 109,750 | 23,800 | 300,270 | 1,466,720 | 2,626,340 | 4,093,060 |
| 68 | 360,300 | 136,630 | 201,790 | 165,510 | 44,100 | 183,440 | 1,091,770 | 2,452,168 | 3,543,938 |
| 69 | 328,960 | 147,880 | 264,750 | 132,510 | 63,470 | 218,060 | 1,155,630 | 4,828,579 | 5,984,208 |
| 1970 | 328,730 | 109,240 | 170,130 | 69,260 | 73,190 | 139,640 | 944,190 | 2,809,996 | 3,754,186 |
| 71 | 529,820 | 161,540 | 614,530 | 104,080 | 337,540 | 373,900 | 2,121,410 | 7,310,964 | 9,432,374 |
| 72 | 317,450 | 91,610 | 66,270 | 27,680 | 28,860 | 75,550 | 607,420 | 54,783 | 662,203 |
| 73 | 264,850 | 44,840 | 563,510 | 66,030 | 106,340 | 184,340 | 1,229,910 | 2,056,878 | 3,206,798 |
| 74 | 229,370 | 186,130 | 200,520 | 141,750 | 11,800 | 89,170 | 858,740 | 448,773 | 1,307,513 |
| 1975 | 570,830 | 44,270 | 580,170 | 77,860 | 110,950 | 234,210 | 1,618,290 | 4,452,805 | 6,071,095 |
| 76 | 446,470 | 123,380 | 116,730 | 51,200 | 12,260 | 115,560 | 865,600 | 3,018,994 | 3,884,594 |
| 77 | 465,970 | 62,150 | 426,670 | 226,060 | 196,970 | 315,510 | 1,693,330 | 4,514,431 | 6,207,761 |
| 78 | 268,940 | 159,870 | 200,950 | 220,610 | 48,680 | 156,830 | 1,055,610 | 2,780,073 ¹ | 3,835,683 |
| 79 | 782,420 | 223,580 | 241,120 | 264,710 | 323,490 | 1,091,970 | 2,927,290 | 15,393,223 ¹ | 18,320,513 |
| 1980 | 515,380 | 171,410 | 338,100 | 134,860 | 114,170 | 302,190 | 1,576,110 | 13,434,024 ¹ | 15,010,134 |
| 81 | 768,000 | 259,850 | 588,880 | 193,750 | 506,140 | 594,890 | 2,911,510 | 19,286,542 ¹ | 22,198,052 |
| 82 | 566,530 | 325,890 | 429,750 | 189,190 | 125,870 | 470,000 | 2,107,330 | 18,936,631 ^{1/2} | 21,043,961 |
| 83 | 504,480 | 180,040 | 521,010 | 182,520 | 247,260 | 634,890 | 2,270,200 | 13,309,461 ^{1/2} | 15,579,661 |

¹ Does not include hatchery harvests.

² Preliminary.

Table 30. Chum salmon runs, Prince William Sound, 1960 - 1983.

| Year | ESCAPEMENTS | | | | | | | Commercial Catch | Total Run |
|------|--------------|----------|---------|--------|--------------|--------------|---------|------------------------|-----------|
| | Northwestern | | | | Southeastern | | | | |
| | Eastern | Northern | Coghill | Eshamy | Montague | Southeastern | Total | | |
| 1960 | 92,100 | 24,729 | 40,458 | 4,800 | 16,782 | 23,008 | 201,877 | 381,858 | 583,735 |
| 61 | 117,950 | 50,420 | 70,940 | 4,750 | 34,380 | 59,910 | 338,350 | 224,401 | 562,751 |
| 62 | 238,660 | 67,670 | 96,020 | 10,610 | 34,190 | 39,690 | 486,840 | 891,880 | 1,378,720 |
| 63 | 148,090 | 68,390 | 114,250 | 5,330 | 15,070 | 20,030 | 371,160 | 942,900 | 1,314,060 |
| 64 | 176,840 | 64,750 | 136,590 | 3,560 | 31,650 | 29,160 | 442,550 | 539,047 | 981,597 |
| 1965 | 69,180 | 20,980 | 39,690 | 1,840 | 17,500 | 46,480 | 195,670 | 201,043 | 396,713 |
| 66 | 85,480 | 39,440 | 42,150 | 3,420 | 32,720 | 20,160 | 223,370 | 426,628 | 649,998 |
| 67 | 97,420 | 50,930 | 15,290 | 2,360 | 11,060 | 10,700 | 187,760 | 274,234 | 461,994 |
| 68 | 99,350 | 31,530 | 37,310 | 5,100 | 1,590 | 21,400 | 196,280 | 342,939 | 539,219 |
| 69 | 81,140 | 9,770 | 43,390 | 2,170 | 1,710 | 26,310 | 164,490 | 320,977 | 485,467 |
| 1970 | 58,180 | 6,100 | 22,000 | 770 | 3,370 | 11,910 | 102,330 | 230,661 | 332,991 |
| 71 | 79,930 | 16,190 | 34,570 | 1,210 | 25,620 | 9,260 | 166,780 | 574,265 | 741,045 |
| 72 | 134,780 | 79,030 | 50,520 | 2,850 | 5,190 | 29,310 | 301,680 | 45,370 | 347,050 |
| 73 | 267,210 | 143,420 | 89,790 | 1,130 | 2,930 | 42,110 | 546,590 | 729,839 | 1,276,429 |
| 74 | 92,840 | 53,830 | 45,010 | 200 | 90 | 2,910 | 194,880 | 88,544 | 283,424 |
| 1975 | 28,220 | 7,820 | 7,410 | 580 | 0 | 2,760 | 46,790 | 100,479 | 147,269 |
| 76 | 17,870 | 26,520 | 38,460 | 90 | 0 | 950 | 83,890 | 370,478 | 454,368 |
| 77 | 53,200 | 36,360 | 41,640 | 4,480 | 560 | 8,370 | 144,610 | 575,839 | 720,449 |
| 78 | 102,290 | 25,410 | 27,650 | 500 | 0 | 6,030 | 161,880 | 485,147 | 647,027 |
| 79 | 57,450 | 17,040 | 18,660 | 80 | 0 | 4,450 | 97,680 | 324,040 | 421,720 |
| 1980 | 32,160 | 34,250 | 14,460 | 40 | 280 | 6,230 | 87,420 | 412,948 ¹ | 500,368 |
| 81 | 92,240 | 39,740 | 47,590 | 770 | 0 | 21,890 | 202,230 | 1,745,869 ² | 1,948,099 |
| 82 | 175,950 | 80,200 | 42,750 | 1,670 | 0 | 26,090 | 326,480 | 1,345,288 ³ | 1,671,768 |
| 83 | 145,670 | 91,770 | 95,850 | 3,700 | 0 | 22,900 | 359,890 | 1,030,546 ³ | 1,390,436 |

¹ Does not include 6 chums harvested at San Juan hatchery.² Does not include 118 chums harvested at San Juan hatchery.³ Preliminary. No chums reported from hatchery sales.

Table 31. Chum salmon age composition, by sex, Prince William Sound, 1983.¹

| | Age Class | | | | |
|-----------------------|-----------|----------|----------|----------|-----------|
| <u>Sex</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>6</u> | Total |
| <u>Male</u> | | | | | |
| Number | 34,689 | 338,447 | 192,058 | 2,256 | 567,450 |
| Percent | 6.11 | 59.64 | 33.85 | 0.40 | 40.66 |
| <u>Female</u> | | | | | |
| Number | 49,525 | 511,683 | 262,054 | 4,924 | 828,186 |
| Percent | 5.98 | 61.79 | 31.64 | 0.59 | 59.34 |
| <u>Sexes Combined</u> | | | | | |
| Number | 84,214 | 850,130 | 454,112 | 7,180 | 1,395,636 |
| Percent | 6.03 | 60.92 | 32.54 | 0.51 | 100.00 |

¹ Total return comprised of a preliminary commercial catch of 1,035,746 fish and an escapement estimate of 359,890 fish. Age composition based on commercial catch samples.

Table 32. Sockeye salmon escapement counts from selected systems in Prince William Sound, 1983.¹

| SYSTEM | | Date of Count | | | | | | | | | |
|---------------|--------|---------------|------|------|------|------|------|------|------|-------|--------------------|
| Name | Number | 7/12 | 7/20 | 7/21 | 7/26 | 8/2 | 8/10 | 8/11 | 8/16 | 8/17 | TOTAL ² |
| Robe River | 137 | | | 321 | | | | | | | 321 |
| Billy's Hole | 218 | 800 | 2500 | | 4000 | 1500 | | 600 | 500 | | 4000 |
| Red Lake | 300 | 500 | 500 | | 400 | 400 | | | | | 500 |
| Shrode Lake | 476 | | 5500 | | 1500 | | | 3000 | | 15000 | 15000 |
| Jackpot Lakes | 608 | | | 6500 | | | 5000 | | | 3500 | 6500 |
| Bainbridge | 630 | | | 1500 | | | 1500 | | | | 1500 |
| TOTAL | | | | | | | | | | | 27821 |

¹ All counts are aerial estimates of live fish unless indicated otherwise.

² Peak live count accepted as season escapement.

Table 33. Commercial catch of salmon by species by period, by gear type in the Coghill district, Prince William Sound, 1983.

| Period | Effort | Catch by Species | | | | | Total |
|------------------------|--------|------------------|---------|-------|---------|---------|---------|
| | | King | Sockeye | Coho | Pink | Chum | |
| <u>Drift Gillnet</u> | | | | | | | |
| 6/20-6/23 ¹ | 303 | 104 | 11,841 | 13 | 4,412 | 8,551 | 24,921 |
| 6/28-6/30 ² | 259 | 136 | 13,802 | 26 | 4,546 | 7,885 | 26,395 |
| 7/7-7/8 ³ | 146 | 42 | 4,908 | 168 | 15,355 | 11,209 | 31,682 |
| 7/11-7/16 | Closed | | | | | | |
| 7/18-7/22 ⁴ | 188 | 102 | 4,671 | 289 | 144,578 | 107,317 | 256,957 |
| 7/25-7/29 | 136 | 589 | 1,118 | 575 | 202,000 | 78,958 | 283,240 |
| 8/1-8/5 | 112 | 2 | 408 | 172 | 13,722 | 17,322 | 31,626 |
| 8/8-8/12 | 17 | 0 | 33 | 0 | 905 | 856 | 1,794 |
| Total Gillnet | | 975 | 36,781 | 1,243 | 385,518 | 232,098 | 656,615 |
| <u>Purse Seine</u> | | | | | | | |
| 7/7-7/8 | 2 | 0 | 81 | 0 | 441 | 49 | 571 |
| 7/11-7/15 | Closed | | | | | | |
| 7/18-7/22 | 9 | 0 | 153 | 5 | 38,448 | 8,280 | 46,886 |
| No effort after 7/22 | | | | | | | |
| Total Purse Seine | | | 234 | 5 | 38,889 | 8,329 | 47,457 |
| <u>Combined Gear</u> | | | | | | | |
| 6/20-6/23 | 303 | 104 | 11,841 | 13 | 4,412 | 8,551 | 24,921 |
| 6/28-6/30 | 259 | 136 | 13,802 | 26 | 4,546 | 7,885 | 26,395 |
| 7/7-7/8 | 148 | 42 | 4,989 | 168 | 15,796 | 11,258 | 32,253 |
| 7/11-7/16 | Closed | | | | | | |
| 7/18-7/22 | 197 | 102 | 4,824 | 294 | 183,026 | 115,597 | 303,843 |
| 7/25-7/29 | 136 | 589 | 1,118 | 575 | 202,000 | 78,958 | 283,240 |
| 8/1-8/5 | 112 | 2 | 408 | 172 | 13,722 | 17,322 | 31,626 |
| 8/8-8/12 | 17 | 0 | 33 | 0 | 905 | 856 | 1,794 |
| Total All Gear | | 975 | 37,015 | 1,248 | 424,407 | 240,427 | 704,072 |

¹ The season was opened on June 20 for regular weekly periods from 6 a.m. Monday through 9 p.m. Thursday.

² Weekly fishing reduced to a 48-hour period from 6 p.m. Tuesday until 6 p.m. Thursday.

³ Weekly fishing reduced to a 39-hour period from 6 p.m. Thursday until 9 p.m. Friday.

⁴ Regular weekly periods from 6 a.m. Monday until 9 p.m. Friday resumed for the duration of the season.

Table 34. Coghill district salmon catch by species and gear, 1974-1983.

| Year | Peak Effort | Catch by Species | | | | | Total |
|-----------------------|----------------|------------------|---------|-------|-----------|---------|-----------|
| | | King | Sockeye | Coho | Pink | Chum | |
| <u>Drift Gill Net</u> | | | | | | | |
| 1974 | 212 | 156 | 95,610 | 103 | 98,149 | 51,428 | 245,446 |
| 1975 | 311 | 525 | 142,864 | 357 | 99,492 | 32,438 | 275,676 |
| 1976 | 229 | 102 | 54,334 | 72 | 53,219 | 89,170 | 196,897 |
| 1977 | 207 | 124 | 154,342 | 49 | 332,859 | 127,476 | 614,850 |
| 1978 | 420 | 469 | 193,899 | 64 | 49,527 | 110,679 | 354,638 |
| 1979 | 247 | 543 | 75,753 | 1,837 | 259,372 | 56,916 | 394,421 |
| 1980 | 112 | 107 | 56,957 | 1,053 | 355,684 | 68,071 | 481,872 |
| 1981 | 171 | 152 | 101,058 | 1,008 | 526,739 | 131,399 | 760,356 |
| 1982 ¹ | 289 | 89 | 925,757 | 169 | 182,758 | 246,694 | 1,355,467 |
| 1983 ¹ | 303 | 975 | 36,781 | 1,243 | 385,518 | 232,098 | 656,615 |
| 10 Year Average | | 324 | 183,736 | 596 | 234,306 | 114,637 | 533,624 |
| <u>Purse Seine</u> | | | | | | | |
| 1974 | 45 | 192 | 4,273 | 22 | 54,268 | 7,720 | 66,475 |
| 1975 | 45 | 246 | 4,985 | 30 | 145,155 | 2,561 | 152,977 |
| 1976 | 111 | 83 | 6,159 | 29 | 56,967 | 30,328 | 93,566 |
| 1977 | 47 | 40 | 16,436 | 50 | 230,215 | 37,102 | 283,843 |
| 1978 | 25 | 206 | 9,623 | 34 | 13,059 | 14,007 | 36,929 |
| 1979 | 29 | 692 | 3,047 | 55 | 38,560 | 5,709 | 48,063 |
| 1980 | 5 | 0 | 2,159 | 0 | 134,876 | 4,702 | 141,737 |
| 1981 | 15 | 1 | 1,997 | 0 | 34,083 | 23,378 | 59,459 |
| 1982 ¹ | 11 | 23 | 16,782 | 29 | 1,042,396 | 144,879 | 1,204,109 |
| 1983 ¹ | 9 | 0 | 234 | 5 | 38,889 | 8,329 | 47,457 |
| 10 Year Average | | 148 | 6,570 | 25 | 178,847 | 27,872 | 213,462 |
| <u>Combined Gear</u> | | | | | | | |
| 1974 | 257 | 348 | 99,883 | 125 | 152,417 | 59,148 | 311,921 |
| 1975 | 356 | 771 | 147,849 | 387 | 244,647 | 34,999 | 428,653 |
| 1976 | 340 | 185 | 60,493 | 101 | 110,186 | 119,498 | 290,463 |
| 1977 | 254 | 164 | 170,778 | 99 | 563,074 | 164,578 | 898,693 |
| 1978 | 445 | 675 | 203,522 | 98 | 62,586 | 124,686 | 391,567 |
| 1979 | 276 | 1,235 | 78,800 | 1,892 | 297,932 | 62,625 | 442,484 |
| 1980 | 117 | 107 | 59,116 | 1,053 | 490,560 | 72,773 | 623,609 |
| 1981 | 186 | 153 | 103,055 | 1,008 | 560,822 | 154,777 | 819,815 |
| 1982 ¹ | 289 | 112 | 942,539 | 198 | 1,225,154 | 391,573 | 2,559,576 |
| 1983 ¹ | 312 | 975 | 37,015 | 1,248 | 424,407 | 240,427 | 704,072 |
| 10 Year Average | | 473 | 190,305 | 621 | 413,179 | 142,508 | 747,085 |

¹ Preliminary.

Table 35. Salmon escapement by species in the Coghill district, 1974 - 1983.

| <u>Year</u> | <u>Sockeye</u> ¹ | <u>Pink</u> ² | <u>Chum</u> ² |
|--------------------|-----------------------------|--------------------------|--------------------------|
| 1974 | 22,333 | 42,660 | 39,700 |
| 1975 | 34,855 | 570,950 | 7,100 |
| 1976 | 9,056 | 50,930 | 35,750 |
| 1977 | 31,562 | 338,750 | 41,640 |
| 1978 | 42,284 | 75,270 | 13,550 |
| 1979 | 48,281 | 66,230 | 13,150 |
| 1980 | 142,253 | 182,430 | 12,610 |
| 1981 | 156,112 ³ | 444,700 | 30,740 |
| 1982 | 180,314 ³ | 264,420 | 24,150 |
| 1983 | 38,783 ³ | 311,200 | 62,800 |
| 10 year average | 70,583 | 234,754 | 28,119 |

¹ Coghill River only. Total weir count beginning in 1974.

² District totals include the west side of Port Wells

³ Includes jacks.

Table 36. Coghill River weir salmon counts, 1983.

| Date | Sockeye | | Pink | | Chum | | King | |
|------|---------|--------|--------|--------|-------|-----|-------|------|
| | Daily | Cum. | Daily | Cum | Daily | Cum | Daily | Cum. |
| 6/3 | 0 | | | | | | | |
| 6/4 | 0 | | | | | | | |
| 6/5 | 0 | | | | | | | |
| 6/6 | 0 | | | | | | | |
| 6/7 | 9 | 9 | | | | | | |
| 6/8 | 11 | 20 | | | | | | |
| 6/9 | 19 | 39 | | | | | | |
| 6/10 | 114 | 153 | | | | | | |
| 6/11 | 0 | 153 | | | | | | |
| 6/12 | 9 | 162 | | | | | | |
| 6/13 | 342 | 504 | | | | | | |
| 6/14 | 0 | 504 | | | | | | |
| 6/15 | 33 | 537 | | | | | | |
| 6/16 | 301 | 838 | | | | | | |
| 6/17 | 145 | 983 | | | | | | |
| 6/18 | 516 | 1,503 | | | | | | |
| 6/19 | 493 | 1,996 | | | | | | |
| 6/20 | 691 | 2,687 | | | | | | |
| 6/21 | 608 | 3,295 | | | | | | |
| 6/22 | 212 | 3,507 | | | | | | |
| 6/23 | 572 | 4,079 | | | 2 | 2 | | |
| 6/24 | 949 | 5,028 | | | | | | |
| 6/25 | 755 | 5,783 | | | | | | |
| 6/26 | 962 | 6,745 | | | | | | |
| 6/27 | 1,198 | 7,943 | 17 | 17 | | | | |
| 6/28 | 1,339 | 9,282 | 20 | 37 | 4 | 6 | 1 | 1 |
| 6/29 | 792 | 10,074 | 22 | 59 | 1 | 7 | | |
| 6/30 | 1,390 | 11,464 | 64 | 123 | | | | |
| 7/1 | 729 | 12,193 | 48 | 171 | 1 | 8 | | |
| 7/2 | 1,167 | 13,360 | 72 | 243 | 6 | 14 | 1 | 2 |
| 7/3 | 2,632 | 15,992 | 174 | 417 | | | | |
| 7/4 | 5,462 | 21,454 | 812 | 1,229 | 2 | 16 | | |
| 7/5 | 2,527 | 23,981 | 817 | 2,046 | 3 | 19 | 1 | 3 |
| 7/6 | 2,916 | 26,897 | 1,003 | 3,049 | | | 1 | 4 |
| 7/7 | 160 | 27,057 | 198 | 3,247 | 2 | 21 | 1 | 5 |
| 7/8 | 932 | 27,989 | 1,148 | 4,396 | 1 | 22 | | |
| 7/9 | 948 | 28,337 | 652 | 5,048 | 6 | 28 | | |
| 7/10 | 238 | 28,575 | 176 | 5,224 | 4 | 32 | 1 | 6 |
| 7/11 | 1,070 | 29,645 | 914 | 6,138 | 9 | 41 | | |
| 7/12 | 1,986 | 31,631 | 2,689 | 8,827 | 1 | 42 | 1 | 7 |
| 7/13 | 671 | 32,302 | 1,217 | 10,044 | 6 | 48 | | |
| 7/14 | 753 | 33,055 | 1,257 | 11,301 | 8 | 56 | | |
| 7/15 | 1,435 | 34,490 | 3,808 | 15,109 | 3 | 59 | 1 | 8 |
| 7/16 | 1,280 | 35,769 | 5,224 | 20,333 | 18 | 77 | 1 | 9 |
| 7/17 | 922 | 36,691 | 8,416 | 28,749 | 52 | 129 | | |
| 7/18 | 436 | 37,127 | 11,698 | 40,447 | 58 | 187 | | |
| 7/19 | 742 | 37,869 | 12,647 | 53,094 | 73 | 260 | 1 | 10 |
| 7/20 | 227 | 38,096 | 12,786 | 65,880 | 104 | 364 | | |
| 7/21 | 67 | 38,163 | 6,216 | 72,096 | 41 | 405 | | |

Table 37. Estimated age and sex composition of sockeye salmon caught in the Coghill District (223) drift gillnet fishery, 1983.

| | | Brood Year and Age Group | | | | | | | TOTAL | |
|--|--------------------------------------|--------------------------|------------|-----------|----------------|------------|-----------|---------------|-----------------|--|
| | | 1977 | | | 1978 | | | 1979 | | |
| | | 1.4 | 2.3 | 3.2 | 1.3 | 2.2 | 0.3 | 1.2 | | |
| Week(s) 26: 19 Jun - 25 Jun Sample Dates: 20 Jun - 23 Jun Sample Size : 613 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 0.5 58 | 2.4 290 | 0.0 0 | 25.4 3,013 | 1.8 212 | 0.2 19 | 16.0 1,893 | 46.3 5,485 | |
| Females | Percent of Sample Number in Catch | 0.7 77 | 2.9 348 | 0.0 0 | 42.1 4,984 | 2.0 232 | 0.0 0 | 6.0 715 | 53.7 6,356 | |
| Sexes Combined | Percent of Sample Number in Catch | 1.2 135 | 5.3 638 | 0.0 0 | 67.5 7,997 | 3.8 444 | 0.2 19 | 22.0 2,608 | 100.0 11,841 | |
| Week(s) 27: 26 Jun - 02 Jul Sample Dates: 28 Jun - 30 Jun Sample Size : 638 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 1.6 227 | 0.8 113 | 0.0 0 | 27.0 3,897 | 0.9 136 | 0.2 23 | 10.3 1,495 | 40.8 5,891 | |
| Females | Percent of Sample Number in Catch | 1.2 181 | 0.9 136 | 0.0 0 | 45.3 6,548 | 2.5 362 | 0.0 0 | 9.3 1,337 | 59.2 8,564 | |
| Sexes Combined | Percent of Sample Number in Catch | 2.8 408 | 1.7 249 | 0.0 0 | 72.3 10,445 | 3.4 498 | 0.2 23 | 19.6 2,832 | 100.0 14,455 | |
| Week(s) 28-33: 03 Jul - 13 Aug Sample Dates: 07 Jul - 08 Jul Sample Size : 586 | | | | | | | | | | |
| Males | Percent of Sample Number in Catch | 1.4 160 | 2.0 239 | 0.0 0 | 29.4 3,434 | 1.9 220 | 0.3 40 | 10.7 1,258 | 45.7 5,351 | |
| Females | Percent of Sample Number in Catch | 0.8 100 | 1.9 220 | 0.2 20 | 38.2 4,472 | 2.7 319 | 0.3 40 | 10.1 1,178 | 54.3 6,349 | |
| Sexes Combined | Percent of Sample Number in Catch | 2.2 260 | 3.9 459 | 0.2 20 | 67.6 7,906 | 4.6 539 | 0.3 80 | 20.8 2,436 | 100.0 11,700 | |

Table 37. (Continued)

| | | Brood Year and Age Group | | | | | | |
|--|--------------------------------------|--------------------------|--------------|-----------|----------------|--------------|------------|-----------------|
| | | 1977 | | | 1978 | | | 1979 |
| | | 1.4 | 2.3 | 3.2 | 1.3 | 2.2 | 0.3 | 1.2 |
| Week(s) Combined: 26-33 19 Jun - 06 Aug 1/ | | | | | | | | |
| Sample Dates: 20 Jun - 08 Jul | | | | | | | | |
| Sample Size : 1,837 | | | | | | | | |
| Males | Percent of Sample Number in Catch | 1.2 444 | 1.7 643 | 0.0 0 | 27.2 10,344 | 1.5 568 | 0.2 82 | 12.2 4,646 |
| Females | Percent of Sample Number in Catch | 0.9 359 | 1.8 703 | 0.1 20 | 42.1 16,004 | 2.4 914 | 0.1 40 | 8.5 3,229 |
| Sexes Combined | Percent of Sample Number in Catch | 2.1 803 | 3.5 1,346 | 0.1 20 | 67.5 26,348 | 3.9 1,482 | 0.3 122 | 20.7 7,876 |
| | | | | | | | | 100.0 37,996 |

1/ Based on weighted sum of weekly catches by sex and age.

Table 38. Estimated age and sex composition of sockeye salmon escapement through Coghill River weir, 1983.

| | Brood Year and Age Group | | | | | | | | | |
|----------------------------------|--------------------------|-----|------|--------|-----|-----|--------|-----|-----|--------|
| | 1977 | | | 1978 | | | 1979 | | | 1980 |
| | 1.4 | 2.3 | 1.1 | 1.3 | 2.2 | 0.3 | 1.2 | 2.1 | 0.2 | |
| | | | | | | | | | | TOTAL |
| Total Escapement: 7 Jun - 21 Jul | | | | | | | | | | |
| Sample Dates: 18 Jun - 16 Jul | | | | | | | | | | |
| Sample Size : 729 | | | | | | | | | | |
| Males | 2.6 | 1.1 | 41.7 | 15,914 | 1.1 | 0.8 | 21.8 | 0.1 | 0.1 | 69.7 |
| | 995 | 419 | | | 419 | 314 | 8,324 | 52 | 52 | 26,594 |
| Females | 0.8 | 0.4 | 22.5 | 8,586 | 0.7 | 0.6 | 5.2 | 0.0 | 0.0 | 30.3 |
| | 314 | 157 | | | 262 | 209 | 1,989 | 0 | 0 | 11,569 |
| Sexes Combined | 3.4 | 1.5 | 64.2 | 24,500 | 1.8 | 1.4 | 20.0 | 0.1 | 0.1 | 100.0 |
| | 1,309 | 576 | | | 681 | 523 | 10,313 | 52 | 52 | 38,163 |

Table 39. Estimated age and sex composition of the sockeye salmon escapement, Eshamy Lake, 1983.

| | Brood Year and Age Group | | | | | | Total |
|---|--------------------------|------|-------|-------|------|--------|-------|
| | 1977 | 1978 | | | 1979 | 1980 | |
| | 2.3 | 1.3 | 2.2 | 1.2 | 1.1 | | |
| Escapement Dates: 21 Jun - 11 Aug Sample Dates: 28 Jul - 07 Aug Sample Size: 384 | | | | | | | |
| Males | 0.5 | 5.5 | 12.2 | 23.2 | 0.8 | 42.2 | |
| | 8 | 83 | 185 | 352 | 12 | 640 | |
| Females | 0.0 | 5.7 | 18.8 | 33.3 | 0.0 | 57.8 | |
| | 0 | 87 | 285 | 505 | 0 | 877 | |
| Sexes Combined | 0.5 | 11.2 | 31.0 | 56.5 | 0.8 | 100.0 | |
| | 8 | 170 | 470 | 857 | 12 | 1,517 | |
| Escapement Dates: 12 Aug - 31 Aug Sample Dates: 14 Aug - 20 Aug Sample Size: 355 | | | | | | | |
| Males | 0.0 | 2.5 | 16.9 | 30.5 | 2.8 | 52.7 | |
| | 0 | 221 | 1,492 | 2,694 | 247 | 4,654 | |
| Females | 0.0 | 2.5 | 16.3 | 28.2 | 0.3 | 47.3 | |
| | 0 | 221 | 1,439 | 2,491 | 26 | 4,177 | |
| Sexes Combined | 0.0 | 5.0 | 33.2 | 58.6 | 3.1 | 100.0 | |
| | 0 | 442 | 2,931 | 5,185 | 273 | 8,831 | |
| Total Escapement: 21 Jun - 31 Aug 1/ Sample Dates: 28 Jul - 20 Aug Sample Size: 739 | | | | | | | |
| Males | 0.1 | 2.9 | 16.2 | 29.4 | 2.5 | 51.1 | |
| | 8 | 304 | 1,677 | 3,046 | 259 | 5,294 | |
| Females | 0.0 | 3.0 | 16.7 | 28.9 | 0.3 | 48.9 | |
| | 0 | 308 | 1,724 | 2,996 | 26 | 5,054 | |
| Sexes Combined | 0.1 | 5.9 | 32.9 | 58.3 | 2.8 | 100.0 | |
| | 8 | 612 | 3,401 | 6,042 | 285 | 10,348 | |

1/ Weighted by the numbers of fish by sex and age escaping in the two strata.

Table 40. Commercial catch of salmon by species, by period, by gear type in the Unakwik District, Prince William Sound, 1983.

| | | Catch by Species | | | | | |
|------------------------|--------|-----------------------|-----------|------|-------|-------|--------|
| Period | Effort | King | Sockeye | Coho | Pink | Chum | Total |
| <u>Drift Gill Net</u> | | | | | | | |
| 6/20-6/23 ¹ | 28 | 1 | 7,476 | 0 | 6 | 5 | 7,479 |
| 6/28-6/30 ² | 37 | 7 | 3,775 | 0 | 78 | 23 | 3,883 |
| 7/7-7/8 ³ | 21 | 0 | 1,784 | 0 | 163 | 104 | 2,051 |
| 7/11-7/16 | | | Closed | | | | |
| 7/17-7/23 ⁴ | 15 | 0 | 240 | 0 | 1,244 | 1,194 | 2,678 |
| 7/25-7/29 | 2 | 0 | 0 | 0 | 26 | 97 | 123 |
| 8/1-8/5 | | | No Effort | | | | |
| Total Gillnet | | 8 | 13,275 | 0 | 1,517 | 1,423 | 16,223 |
| <u>Purse Seine</u> | | | | | | | |
| 6/20-7/16 | | No Purse Seine Effort | | | | | |
| 7/17-7/23 | 1 | 0 | 6 | 0 | 2,460 | 693 | 3,153 |
| Total Seine | | 1 | 6 | 0 | 2,460 | 693 | 3,153 |
| <u>Combined Gear</u> | | | | | | | |
| Total | | 8 | 13,281 | 0 | 3,977 | 2,116 | 19,376 |

¹ The season was opened on June 20 for regular weekly periods from 6 a.m. Monday through 9 p.m. Thursday.

² Weekly fishing reduced to a 48-hour period from 6 p.m. Tuesday until 6 p.m. Thursday.

³ Weekly fishing reduced to a 39-hour period from 6 p.m. Thursday until 9 p.m. Friday.

⁴ Regular weekly periods from 6 a.m. Monday until 9 p.m. Friday resumed for the duration of the season.

Table 41. Unakwik district salmon catch by species and gear, 1974-1983.

| Catch by Species | | | | | | | |
|------------------------------|-------------|------|------------|------|--------|--------|---------|
| Year | Peak Effort | King | Sockeye | Coho | Pink | Chum | Total |
| <u>Drift Gill Net</u> | | | | | | | |
| 1974 | 16 | 5 | 10,449 | 3 | 10,911 | 500 | 21,868 |
| 1975 | 14 | 4 | 11,922 | 0 | 84 | 70 | 12,080 |
| 1976 | 15 | 4 | 8,421 | 0 | 2,744 | 331 | 11,500 |
| 1977 | 16 | 3 | 7,912 | 2 | 257 | 141 | 8,315 |
| 1978 | 22 | 24 | 9,116 | 0 | 2,082 | 597 | 11,819 |
| 1979 | 30 | 11 | 9,250 | 9 | 2,359 | 289 | 11,918 |
| 1980 | 3 | 0 | 1,547 | 6 | 4,815 | 727 | 7,095 |
| 1981 | 7 | 0 | 2,445 | 0 | 4,152 | 1,330 | 7,927 |
| 1982 ¹ | 19 | 1 | 48,644 | 0 | 334 | 597 | 49,576 |
| 1983 ¹ | 37 | 8 | 13,275 | 0 | 1,517 | 1,423 | 16,223 |
| 10 Year Average | | 6 | 11,898 | 2 | 2,926 | 601 | 15,832 |
| <u>Purse Seine</u> | | | | | | | |
| 1974 | | | no fishing | | | | |
| 1975 | | | no fishing | | | | |
| 1976 | 4 | 0 | 7 | 0 | 8,526 | 225 | 8,758 |
| 1977 | | | no fishing | | | | |
| 1978 | 24 | 3 | 268 | 5 | 55,115 | 5,025 | 60,416 |
| 1979 | | | no fishing | | | | |
| 1980 | 3 | 0 | 6 | 0 | 9,113 | 355 | 9,474 |
| 1981 | 5 | 0 | 108 | 0 | 71,624 | 17,650 | 89,382 |
| 1982 ¹ | 6 | 0 | 2 | 4 | 88,837 | 517 | 89,360 |
| 1983 ¹ | 1 | 0 | 6 | 0 | 2,460 | 693 | 3,153 |
| 10 Year Average ² | | 0 | 66 | 2 | 39,279 | 4,078 | 43,424 |
| <u>Combined Gear</u> | | | | | | | |
| 1974 | 16 | 5 | 10,449 | 3 | 10,911 | 500 | 21,868 |
| 1975 | 14 | 4 | 11,922 | 0 | 84 | 70 | 12,080 |
| 1976 | 19 | 4 | 8,428 | 0 | 11,270 | 556 | 20,258 |
| 1977 | 16 | 3 | 7,912 | 2 | 257 | 141 | 8,315 |
| 1978 | 46 | 27 | 9,384 | 5 | 57,197 | 5,622 | 72,235 |
| 1979 | 30 | 11 | 9,250 | 9 | 2,359 | 289 | 11,918 |
| 1980 | | | 1,553 | 6 | 13,928 | 1,082 | 16,569 |
| 1981 | 12 | 0 | 2,553 | 0 | 75,776 | 18,980 | 97,309 |
| 1982 ¹ | 25 | 1 | 48,646 | 4 | 89,171 | 1,114 | 138,936 |
| 1983 ¹ | 38 | 8 | 13,281 | 0 | 3,977 | 2,116 | 19,376 |
| 10 Year Average | | 6 | 12,338 | 3 | 26,393 | 30,470 | 41,886 |

Preliminary

² Average of years fished.

Table 42. Eshamy district salmon catch by species and gear, 1983.¹

| Period | Effort | Catch by Species | | | | | Total |
|-----------------------|--------|------------------|-----------|------|---------|-------|---------|
| | | King | Sockeye | Coho | Pink | Chum | |
| <u>Drift Gill Net</u> | | | | | | | |
| 7/25-30 | 24 | 0 | 111 | 0 | 41,517 | 1,295 | 42,923 |
| 7/31-8/6 | 18 | 0 | 133 | 3 | 45,507 | 996 | 46,639 |
| 8/7-13 | 19 | 0 | 217 | 3 | 54,499 | 358 | 55,077 |
| 8/14-20 | 9 | 1 | 179 | 1 | 12,787 | 56 | 13,024 |
| 8/21-27 | 3 | 0 | 84 | 2 | 10,546 | 49 | 10,681 |
| 8/28-9/2 | | | NO EFFORT | | | | |
| Total Drift Gill Net | 1 | | 724 | 9 | 164,856 | 2,754 | 168,344 |
| <u>Set Gill Net</u> | | | | | | | |
| 7/25-30 | 13 | 0 | 266 | 0 | 31,647 | 1,693 | 33,606 |
| 7/31-8/6 | 13 | 1 | 258 | 1 | 46,991 | 1,270 | 48,521 |
| 8/7-13 | 13 | 0 | 102 | 1 | 42,835 | 151 | 43,089 |
| 8/14-20 | 12 | 0 | 469 | 9 | 24,932 | 190 | 25,600 |
| 8/21-27 | 6 | 0 | 233 | 2 | 43,748 | 125 | 44,108 |
| 8/28-9/2 | | | NO EFFORT | | | | |
| Total Set Gill Net | 1 | | 1,328 | 13 | 190,153 | 3,429 | 194,924 |
| <u>Combined Gear</u> | | | | | | | |
| 7/25-30 | 37 | 0 | 377 | 0 | 73,164 | 2,988 | 76,529 |
| 7/31-8/6 | 31 | 1 | 391 | 4 | 92,498 | 2,266 | 95,160 |
| 8/7-13 | 32 | 0 | 319 | 4 | 97,334 | 509 | 98,166 |
| 8/14-20 | 21 | 1 | 648 | 10 | 37,719 | 246 | 38,624 |
| 8/21-27 | 9 | 0 | 317 | 4 | 54,294 | 174 | 54,789 |
| 8/28-9/2 | | | NO EFFORT | | | | |
| Total Combined Gear | 2 | | 2,052 | 22 | 355,099 | 6,183 | 363,268 |

¹ General district remained closed throughout the season. All catches are from Main Bay hatchery terminal fishery which was open to continuous fishing from July 25 until September 2.

Table 43. Eshamy district salmon catch by species and gear, 1974-1983.

| Year | Peak Effort | Catch by Species | | | | | Total |
|------------------------------|-------------|------------------|-------------|-------|---------|--------|---------|
| | | King | Sockeye | -Coho | Pink | Chum | |
| <u>Drift Gill Net</u> | | | | | | | |
| 1974 | 146 | 18 | 12,640 | 114 | 217,141 | 23,488 | 253,401 |
| 1975 | | | C L O S E D | | | | |
| 1976 | | | C L O S E D | | | | |
| 1977 | 53 | 22 | 16,916 | 49 | 63,036 | 8,344 | 88,367 |
| 1978 | | | C L O S E D | | | | |
| 1979 | | | C L O S E D | | | | |
| 1980 | 16 | 0 | 684 | 25 | 3,235 | 130 | 4,074 |
| 1981 | | | C L O S E D | | | | |
| 1982 | | | C L O S E D | | | | |
| 1983 ¹ | 24 | 1 | 724 | 9 | 164,856 | 2,754 | 168,344 |
| 10 Year Average ² | | 10 | 7,741 | 49 | 112,067 | 8,679 | 128,546 |
| <u>Set Net</u> | | | | | | | |
| 1974 | 10 | 4 | 6,394 | 11 | 68,300 | 5,408 | 80,117 |
| 1975 | | | C L O S E D | | | | |
| 1976 | | | C L O S E D | | | | |
| 1977 | 12 | 9 | 9,889 | 2 | 24,743 | 4,218 | 38,861 |
| 1978 | | | C L O S E D | | | | |
| 1979 | | | C L O S E D | | | | |
| 1980 | 5 | 0 | 2,000 | 38 | 2,371 | 134 | 4,543 |
| 1981 | | | C L O S E D | | | | |
| 1982 | | | C L O S E D | | | | |
| 1983 ¹ | 13 | 1 | 1,328 | 13 | 190,153 | 3,429 | 194,924 |
| 10 Year Average ² | | 4 | 4,903 | 16 | 71,391 | 3,297 | 79,611 |
| <u>Combined Gear</u> | | | | | | | |
| 1974 | 156 | 22 | 19,034 | 125 | 285,441 | 28,896 | 333,518 |
| 1975 | | | C L O S E D | | | | |
| 1976 | | | C L O S E D | | | | |
| 1977 | 65 | 31 | 26,805 | 51 | 87,779 | 12,562 | 127,228 |
| 1978 | | | C L O S E D | | | | |
| 1979 | | | C L O S E D | | | | |
| 1980 | 21 | 0 | 2,661 | 63 | 5,331 | 264 | 8,319 |
| 1981 | | | C L O S E D | | | | |
| 1982 | | | C L O S E D | | | | |
| 1983 ¹ | 37 | 2 | 2,052 | 22 | 355,009 | 6,183 | 363,268 |
| 10 Year Average ² | | 14 | 12,638 | 65 | 183,390 | 11,976 | 208,083 |

-Continued-

Table 43. (Continued)

- ¹ General district remained closed throughout the season. All catches are from Main Bay hatchery terminal fishery which was open to continuous fishing from July 25 until September 2.
- ² Only the four years open to fishing during this period were used to calculate averages. The general purse seine season was also closed during 1974, and is reflected in the larger catches during that year.

Table 44. Salmon escapement from weir and stream foot survey counts, Eshamy district, 1974 - 1983.

| Year | King ¹ | Sockeye ¹ | Coho ¹ | Pink ² | Chum ¹ |
|-----------------|-------------------|----------------------|-------------------|-------------------|-------------------|
| 1974 | | 633 | | 6,330 | |
| 1975 | | 1,724 | 41 | 5,720 | 440 |
| 1976 | | 19,367 | 125 | 5,500 | |
| 1977 | | 11,746 | 230 | 32,080 | |
| 1978 | | 12,580 | 20 | 5,690 | |
| 1979 | | 12,169 | | 12,860 | |
| 1980 | 5 | 44,263 | 128 | 13,813 | 2 |
| 1981 | | 23,048 ³ | 249 | 21,490 | 13 |
| 1982 | 1 | 6,782 | 79 | 14,080 | 79 |
| 1983 | | 10,348 | 58 | 9,280 | 100 |
| 10 Year Average | | 14,266 | 126 | 12,021 | 134 |

¹ Weir count.

² Number of streams surveyed varies from three to five for pink salmon, (See Technical Data Report No. 35 and Data Report No. 9).

³ Assuming the run was 90% complete, an additional 2,600 sockeye are estimated to have escaped following the removal of the weir.

Table 45. Eshamy River weir salmon counts, 1983.

| Date | Sockeye | | Pink | | Chum | | Coho | |
|------|---------|------|-------|------|-------|------|-------|------|
| | Daily | Cum. | Daily | Cum. | Daily | Cum. | Daily | Cum. |
| 6/15 | 0 | | | | | | | |
| 6/16 | 0 | | | | | | | |
| 6/17 | 0 | | | | | | | |
| 6/18 | 0 | | | | | | | |
| 6/19 | 0 | | | | | | | |
| 6/20 | 6 | 6 | | | | | | |
| 6/21 | 0 | 6 | | | | | | |
| 6/22 | 1 | 7 | | | | | | |
| 6/23 | 0 | 7 | | | | | | |
| 6/24 | 0 | 7 | | | | | | |
| 6/25 | 0 | 7 | | | | | | |
| 6/26 | 0 | 7 | | | | | | |
| 6/27 | 0 | 7 | | | | | | |
| 6/28 | 1 | 8 | | | | | | |
| 6/29 | 0 | 8 | | | | | | |
| 6/30 | 0 | 8 | | | | | | |
| 7/1 | 2 | 10 | | | | | | |
| 7/2 | 2 | 12 | | | | | | |
| 7/3 | 1 | 13 | | | | | | |
| 7/4 | 0 | 13 | | | | | | |
| 7/5 | 1 | 14 | | | | | | |
| 7/6 | 0 | 14 | | | | | | |
| 7/7 | 0 | 14 | | | | | | |
| 7/8 | 0 | 14 | | | | | | |
| 7/9 | 1 | 15 | | | | | | |
| 7/10 | 0 | 15 | | | | | | |
| 7/11 | 7 | 22 | | | | | | |
| 7/12 | 3 | 25 | | | | | | |
| 7/13 | 1 | 26 | | | | | | |
| 7/14 | 3 | 29 | | | | | | |
| 7/15 | 0 | 29 | | | | | | |
| 7/16 | 2 | 31 | | | | | | |
| 7/17 | 5 | 36 | | | | | | |
| 7/18 | 1 | 37 | | | | | | |
| 7/19 | 1 | 38 | | | | | | |
| 7/20 | 3 | 41 | | | | | | |
| 7/21 | 0 | 41 | | | | | | |
| 7/22 | 1 | 42 | | | | | | |
| 7/23 | 2 | 44 | | | | | | |
| 7/24 | 1 | 45 | 1 | 1 | | | | |
| 7/25 | 1 | 46 | 1 | 2 | | | | |
| 7/26 | 4 | 50 | 1 | 3 | | | | |
| 7/27 | 3 | 53 | | | | | | |
| 7/28 | 89 | 142 | 1 | 4 | | | | |
| 7/29 | 38 | 180 | 8 | 12 | | | | |
| 7/30 | 18 | 198 | 15 | 27 | | | | |
| 7/31 | 4 | 202 | 9 | 36 | | | | |
| 8/1 | 16 | 218 | 17 | 53 | | | | |
| 8/2 | 0 | 218 | 18 | 71 | | | | |
| 8/3 | 89 | 307 | 47 | 118 | | | | |
| 8/4 | 91 | 398 | 22 | 140 | | | | |

Table 45. (Continued)

| Date | Sockeye | | Pink | | Chum | | Coho | |
|------|---------|--------|-------|-------|-------|------|-------|------|
| | Daily | Cum. | Daily | Cum. | Daily | Cum. | Daily | Cum. |
| 8/4 | 91 | 398 | 22 | 140 | | | | |
| 8/5 | 479 | 877 | 746 | 886 | | | | |
| 8/6 | 190 | 1,067 | 225 | 1,111 | | | 2 | 2 |
| 8/7 | 448 | 1,515 | 280 | 1,391 | | | 3 | 5 |
| 8/8 | 1,021 | 2,536 | 769 | 2,160 | | | 4 | 9 |
| 8/9 | 353 | 2,889 | 415 | 2,575 | | | 1 | 10 |
| 8/10 | 458 | 3,347 | 385 | 2,960 | | | 3 | 13 |
| 8/11 | 468 | 3,815 | 283 | 3,243 | | | 3 | 16 |
| 8/12 | 198 | 4,013 | 106 | 3,349 | | | | |
| 8/13 | 175 | 4,188 | 82 | 3,431 | | | | |
| 8/14 | 300 | 4,488 | 69 | 3,500 | | | 4 | 20 |
| 8/15 | 149 | 4,637 | 65 | 3,565 | | | | |
| 8/16 | 143 | 4,780 | 78 | 3,643 | | | | |
| 8/17 | 346 | 5,126 | 153 | 3,796 | | | | |
| 8/18 | 56 | 5,182 | 82 | 3,878 | | | | |
| 8/19 | 213 | 5,395 | 96 | 3,974 | | | 3 | 23 |
| 8/20 | 30 | 5,425 | 20 | 3,994 | | | | |
| 8/21 | 181 | 5,606 | 132 | 4,126 | | | | |
| 8/22 | 268 | 5,874 | 78 | 4,204 | | | 3 | 26 |
| 8/23 | 187 | 6,061 | 60 | 4,264 | | | | |
| 8/24 | 409 | 6,470 | 321 | 4,585 | | | | |
| 8/25 | 621 | 7,091 | 454 | 6,039 | | | 8 | 34 |
| 8/26 | 1,239 | 8,330 | 429 | 6,468 | | | 1 | 35 |
| 8/27 | 834 | 9,164 | 235 | 6,703 | 4 | 4 | 4 | 39 |
| 8/28 | 401 | 9,565 | 160 | 6,863 | | | | |
| 8/29 | 315 | 9,880 | 78 | 6,941 | | | | |
| 8/30 | 337 | 10,217 | 89 | 7,030 | | | | |
| 8/31 | 131 | 10,348 | 17 | 7,047 | | | 1 | 40 |

Table 46. Summary of season, location, effort and harvest by gear type in the Prince William Sound herring fishery, 1983.

| Fishery | District | Effort | Harvest (MT) | Fishing Duration | |
|-------------------|----------------------|------------------|--------------|----------------------------------|------------|
| Sac Roe Seine | Northern/ General | 103 ¹ | 2,474.8 | 4/13 | (1 hour) |
| Sac Roe Gill Net | Northern | 22 | 95.6 | 4/21-22 | (24 hours) |
| Spawn on Kelp | Northern | 186 ² | 137.5 | 4/27 | (12 hours) |
| Herring Pounds | Northern | 30 ³ | 25.2 | 4/30-5/4 | |
| Herring Bait/Food | General | 2 ⁴ | 248.2 | 9/15/83- 1/31/84 ⁵ | |

¹103 boats participating but only 72 actually made deliveries

²194 permits were issued. Only 186 actual deliveries of spawn on kelp were made. There were 37 fishermen without harvest permits who made deliveries.

³47 permits issued. 38 pounds were constructed and 30 permittees actually harvested pound kelp.

⁴Two seine boats participated.

⁵Bait markets were limited due to forecasted poor crab seasons, and above average bait harvests in other areas. The fishery remained open for the full season permitted by regulation.

Table 47. Herring sac roe harvested in Prince William Sound, 1969 - 1983¹

| Year | Effort Seines | Harvest (MT) | Effort Gill Nets | Harvest (MT) | Total Harvest (MT) |
|-------------------|------------------|----------------------|---------------------|-----------------|-----------------------|
| 1969 | 6 | 322.6 | | | 322.6 |
| 1970 | | | | | |
| 1971 | 12 | 833.8 | | | 833.8 |
| 1972 | 16 | 1,607.8 | | | 1,607.8 |
| 1973 | 28 | 6,335.1 | | | 6,335.1 |
| 1974 | 72 | 5,776.1 | 3 | 3.48 | 5,779.6 |
| 1975 | 76 | 5,516.1 | | | 5,516.1 |
| 1976 ² | 66 | 2,344.2 | | | 2,344.2 |
| 1977 ³ | 60 | 2,070.7 | 1 | 1.42 | 2,072.1 |
| 1978 | 75 | 1,206 | 38 | 56 | 1,262 |
| 1979 | 89 | 3,753.8 | | | 3,753.8 |
| 1980 | 74 | 5,481.4 ⁴ | 16 | 239.87 | 5,721.3 |
| 1981 | 101 | 12,490.3 | 18 | 212.78 | 12,703 |
| 1982 ³ | 104 | 6,485 | 20 | 304.35 | 6,789.4 |
| 1983 | 103 ⁵ | 2,474.8 | 22 | 95.6 | 2,570.4 |

¹ 1981 - 1982 data preliminary.

² No sac roe fishery in the Northern district.

³ No sac roe fishery in the Montague district.

⁴ 350 - 500 tons dead loss.

⁵ 103 boats participating but only 72 actually made deliveries .

Table 48. Herring eggs-on-kelp harvested from natural spawning, Prince William Sound, 1969 - 1983.

| Year | Effort | Harvest | | Herring ² Utilized (Metric Tons) |
|------|--------|---------------------|-------------|--|
| | | Pounds ¹ | Metric Tons | |
| 1969 | 3 | 5,300 | 2.4 | 18.9 |
| 1970 | 29 | 190,300 | 86.3 | 681.7 |
| 1971 | 34 | 769,300 | 348.9 | 2,756.3 |
| 1972 | 397 | 599,300 | 271.8 | 2,147.2 |
| 1973 | 176 | 306,300 | 138.9 | 1,097.3 |
| 1974 | 166 | 552,100 | 250.4 | 1,978.2 |
| 1975 | 437 | 917,100 | 415.9 | 3,285.6 |
| 1976 | 357 | 484,900 | 219.9 | 1,737.2 |
| 1977 | 164 | 417,000 | 189.1 | 1,493.9 |
| 1978 | 66 | 140,900 | 63.9 | 504.8 |
| 1979 | 198 | 473,200 | 214.6 | 1,695.3 |
| 1980 | 469 | 612,300 | 277.7 | 2,193.8 |
| 1981 | 214 | 122,400 | 55.5 | 438.5 |
| 1982 | 151 | 309,600 | 140.4 | 1,109.2 |
| 1983 | 186 | 303,200 | 137.5 | 1,086.3 |

¹ Rounded to nearest 100 pounds.

² Indicates the annual removal of reproductive capacity from the population based on the assumption that average fish roe recovery is 10% and 79% of spawn on kelp harvest weight consists of eggs.

Table 49. Herring for bait and food harvested in Prince William Sound in metric tons, 1970 - 1983.¹

| Year | Seine | | Pair Trawl | | Mid-Water Trawl | | Otter Trawl | | Total MT |
|----------------------|--------|---------------|------------|---------------|-----------------|---------------|-------------|---------------|-------------|
| | Effort | Harvest MT | Effort | Harvest MT | Effort | Harvest MT | Effort | Harvest MT | |
| 1970 | 1 | 5.1 | | | | | | | 9.1 |
| 1971 | 2 | 18.1 | | | | | | | 18.1 |
| 1972 | 1 | 4.4 | | | | | | | 4.4 |
| 1973 | 1 | 7.7 | | | | | | | 7.7 |
| 1977-78 ² | 2 | 15.4 | 2 | 131.8 | 1 | 82 | | | 147.2 |
| 1978-79 ³ | 2 | 177.2 | 2 | 896.9 | 1 | 93.6 | 1 | 2.3 | 1156.1 |
| 1979-80 ⁴ | 1 | 463.4 | 2 | 131.6 | | | | | 691 |
| 1980-81 ⁵ | 3 | 934.7 | 3 | 350.1 | | | | | 1184.8 |
| 1981-82 ⁶ | 6 | 1,078.9 | 2 | 66.3 | | | | | 1145.2 |
| 1982-83 | 5 | 801.1 | | | | | | | 801.1 |
| 1983-84 | 2 | 248.2 | | | | | | | 248.2 |

¹ No harvest in years not listed.

² From 1977 to present bait herring season includes portions of two calendar years.

³ Fishery opened by emergency order on 10/16/79 and extended on 1/7/80. Deliveries made through March 2.

⁴ Fishing season opened by emergency order 9/15, closed 12/31, and reopened by emergency order from 2/16-28.

⁵ Fishing season opened by regulation on September 15 and closed by emergency order on 11/7.

⁶ Fishing season opened by regulation on September 15 and closed by emergency order on 9/30.

Table 50. Herring eggs on kelp produced in pounds, Prince William Sound, 1979 - 1983.

| PRODUCTION | | | | | | | | | | |
|------------|--------------------|------------------------|----------------------|--------------------------------------|--------|-------------|----------------|------------------|--------|-------------|
| Year | No. Permits Issued | No. Pounds Constructed | No. Producing Pounds | Herring ¹ Utilized (Tons) | Ribbon | | Macrocyctis | | Total | |
| | | | | | lbs. | Metric Tons | lbs. | Metric Tons | lbs. | Metric Tons |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 1979 | 2 | 0 | - | - | - | + | + ² | + | + | |
| 1980 | 14 | 4 | 2 | 27 - 45 | 1,771 | 0.8 | 880 | 0.4 | 2,651 | 1.2 |
| 1981 | 18 ³ | 18 | 11 ⁴ | 110 - 157 | 17,217 | 7.8 | 2,100 | 1.0 ⁵ | 19,317 | 8.8 |
| 1982 | 25 | 20 | 18 ⁶ | 260 - 385 | 50,165 | 22.8 | 900 | 0.4 | 51,065 | 23.2 |
| 1983 | 47 | 38 | 30 ⁷ | 200 - 303 | 35,364 | 16.1 | 20,100 | 9.1 | 55,464 | 25.2 |

¹ Tonnage expressed as a range since herring are estimated visually and are not actually weighed.

² A small quantity of Macrocyctis sp. imported from Southeastern Alaska was suspended from lines in Tatitlek Narrows to test the feasibility of using this kelp, and an undetermined amount of eggs-on-kelp was produced.

³ Includes two permits issued after the March 1 application deadline.

⁴ Although 11 permittees reported production, all harvest came from only 7 of the 18 pounds actually constructed.

⁵ Four individuals imported an estimated 12,000 pounds of Macrocyctis sp. from Southeastern Alaska. However, only a small portion of this was actually used in two pounds with the remainder either lost due to deterioration or was suspended on lines in potential spawning areas away from the pounding site.

⁶ Although all pound operators reported production, harvest came from only 18 of the 20 pounds constructed.

⁷ Although 30 pound operators reported production, harvest came from only 26 of the 30 pounds.

Table 1. Daily aerial survey estimates of herring during the sac roe season in Prince William Sound, 1983

| Date | Location | No. of Schools | | | Estimated Tonnage ² | Spawn | Remarks |
|-------------------|---------------------------------|----------------|------|------|--------------------------------|-------|------------------------------------|
| | | Sm. | Med. | Lge. | | | |
| NORTHERN DISTRICT | | | | | | | |
| 4-1 | Landlocked Bay - Eickelberg | 0 | 0 | 0 | 0 | | |
| 4-6 | Port Fidalgo - Jack Bay | 0 | 1 | 0 | 40 | | |
| 4-8 | Fish Bay - Naked Island | 6 | 12 | 5 | 2,290 | | 20 Sea lions outer Galena |
| 4-12 | Landlocked - Fairmont Bay | 4 | 7 | 0 | 320 | X | |
| 4-17 | Pt. Freemantle - Landlocked Bay | 10 | 25 | 0 | 1,100 | X | |
| 4-18 | Boulder Bay - Rocky Point | 6 | 4 | 0 | 220 | X | Incomplete survey, poor visibility |
| 4-19 | Johnson Cove - Port Fidalgo | 2 | 0 | 0 | 20 | | |
| 4-20 | Jack Bay - Landlocked Bay | 7 | 16 | 0 | 710 | X | Fish not showing |
| 4-21 | Landlocked Bay - Sawmill Bay | 0 | 0 | 0 | 0 | X | |
| 4-22 | Jackson Cove - Landlocked Bay | 7 | 2 | 0 | 150 | X | |
| 4-24 | Landlocked - Pt. Freemantle | 3 | 2 | 0 | 110 | X | |
| 4-25 | Freemantle - Landlocked Bay | 9 | 12 | 0 | 570 | | |
| 4-26 | Glacier Is. - Landlocked Bay | 30 | 20 | 0 | 1,100 | X | |
| 4-27 | Landlocked Bay - Port Valdez | 33 | 17 | 0 | 1,010 | X | |
| 4-28 | Pt. Freemantle - Landlocked | 4 | 22 | 0 | 920 | X | |
| 4-29 | Pt. Freemantle - Boulder Bay | 7 | 36 | 1 | 1,860 | X | |
| 5-4 | Landlocked Bay - Johnson Cove | 8 | 8 | 0 | 400 | X | |
| 5-6 | Landlocked Bay - Galena Bay | 0 | 3 | 0 | 120 | X | |
| 5-10 | Pt. Freemantle - Galena Bay | 5 | 19 | 0 | 810 | X | New fish |
| GENERAL DISTRICT | | | | | | | |
| 3-24 | Perry Island - Naked Island | 0 | 0 | 0 | 0 | | |
| 3-29 | Knight Island - Naked Island | 0 | 0 | 0 | 0 | | |
| 4-1 | Naked Island - Knight Island | 0 | 0 | 0 | 0 | | |
| 4-5 | Naked Island - Columbia Bay | 0 | 0 | 0 | 0 | | No activity |
| 4-7 | Olsen Island - Glacier Island | 13 | 6 | 0 | 370 | | |
| 4-7 | Naked Island | 2 | 2 | 1 | 450 | | Bass Harbor only |
| 4-8 | Fairmont Island - Glacier Is. | 8 | 2 | 0 | 160 | X | |
| 4-9 | Naked, Peak, Storey Is. | 12 | 25 | 5 | 2,870 | | |

Table 51. (Continued)

| Date | Location | No. of Schools | | | Estimated Tonnage ² | Spawn | Remarks |
|-------------------|-----------------------------|----------------|------|------|-----------------------------------|-------|-----------------------------------|
| | | Sm. | Med. | Lge. | | | |
| 4-9 | Glacier Island - Cedar Bay | 14 | 39 | 0 | 1,700 | X | |
| 4-10 | Naked Island group | 4 | 21 | 6 | 2,980 | | |
| 4-10 | Wells Bay - Fairmont Bay | 9 | 11 | 2 | 1,230 | X | |
| 4-12 | Naked Island group | 29 | 74 | 10 | 6,750 | X | |
| 4-14 | Naked Island group | 13 | 35 | 3 | 2,580 | X | Poor Visibility |
| 4-14 | Fairmont Island | 4 | 0 | 0 | 40 | X | New fish at Fairmont |
| 4-17 | Naked Island group | 8 | 24 | 1 | 1,390 | X | |
| 4-17 | Fairmont Is. - Cedar Bay | 0 | 0 | 0 | 0 | | |
| 4-19 | Naked Island group | 1 | 19 | 5 | 2,520 | X | New fish moving in |
| 4-20 | Naked Island group | 2 | 11 | 7 | 2,910 | X | |
| 4-21 | Naked Island group | 0 | 1 | 0 | 40 | X | |
| 4-22 | Naked Island group | 2 | 10 | 0 | 410 | X | 300 tons new fish |
| 4-23 | Naked Island group | 10 | 23 | 3 | 2,070 | X | Most are new fish from offshore |
| 4-24 | Naked Island group | 3 | 34 | 0 | 1,390 | X | |
| 4-25 | Naked Island group | 9 | 12 | 0 | 570 | | New fish |
| 4-25 | Fairmont Bay | 5 | 2 | 0 | 130 | | |
| 4-26 | Fairmont Bay | 2 | 0 | 0 | 20 | | |
| 4-26 | Naked Island group | 9 | 9 | 0 | 450 | X | |
| 4-28 | Naked Island - Smith Island | 6 | 10 | 0 | 460 | X | |
| 4-28 | Fairmont Bay - Glacier Is. | 5 | 4 | 0 | 210 | | |
| 4-29 | Naked Island - Smith Island | 6 | 32 | 1 | 1,690 | X | All new fish |
| 4-29 | Fairmont Island | 0 | 0 | 0 | 0 | X | |
| 5-3 | Naked Island group | 0 | 0 | 0 | 0 | | |
| 5-21 | Fairmont Is. - Cochrane Bay | 45 | 28 | 0 | 1,570 | X | Mixed maturity, widely scattered |
| MONTAGUE DISTRICT | | | | | | | |
| 3-23 | Schooner Rk. - Pt. Chalmers | 0 | 0 | 0 | 0 | | |
| 3-29 | Zaikof Bay - Chalmers | 0 | 0 | 0 | 0 | | |
| 4-1 | Green Is. - Zaikof Bay | 0 | 0 | 0 | 0 | | |
| 4-5 | Zaikof Bay - Green Is. | 0 | 0 | 0 | 0 | | 200 Sea lions in Green Is. trench |

Table (Continued)

| Date | Location | No. of Schools | | | Estimated Tonnage ² | Spawn | Remarks |
|------------------|---------------------------------|----------------|------|------|--------------------------------|-------|--------------------------------|
| | | Sm. | Med. | Lge. | | | |
| 4-6 | Rocky Bay - Port Chalmers | 0 | 0 | 0 | 0 | | |
| 4-7 | Hanning Bay - Zaikof Bay | 12 | 10 | 2 | 1,220 | | Fish N. of Hanning Bay |
| 4-7 | Hanning Bay - Stockdale | 27 | 23 | 25 | 9,940 | X | Poor visibility - low count |
| 4-8 | Zaikof Bay - Hanning Bay | 4 | 4 | 16 | 5,800 | | |
| 4-9 | Zaikof Bay - Macleod Harbor | 77 | 46 | 49 | 19,760 | | Most in Hanning Bay |
| 4-10 | Zaikof Bay - Macleod Harbor | 28 | 34 | 12 | 5,830 | | Hanning Bay to Kelez Cr. |
| 4-12 | Zaikof Bay - Macleod Harbor | 5 | 5 | 7 | 2,700 | | 300 + Sea lions - Rocky Bay |
| 4-14 | Zaikof Bay - Green Island | 9 | 25 | 3 | 2,140 | X | Bird and sea lions in Zaikof |
| 4-17 | Zaikof Bay - Green Island | 6 | 4 | 1 | 570 | | Most activity on Green Island |
| 4-20 | Zaikof Bay - Green Island | 6 | 0 | 0 | 60 | | Very little bird/lion activity |
| 4-21 | Zaikof Bay - Green Island | 0 | 2 | 0 | 80 | X | |
| 4-22 | Green Is. - Zaikof Bay | 0 | 0 | 0 | 0 | | Very little bird/lion activity |
| 4-23 | Zaikof Bay - Green Island | 3 | 0 | 0 | 30 | | |
| 4-25 | Zaikof Bay - Green Island | 2 | 1 | 0 | 60 | | |
| 4-26 | Zaikof Bay - Green Island | 6 | 12 | 0 | 540 | | |
| 4-28 | Zaikof Bay - Chalmers | 2 | 5 | 0 | 220 | X | Light spawn Zaikof |
| 4-29 | Zaikof Bay - Port Chalmers | 7 | 11 | 0 | 510 | X | |
| 5-1 | Zaikof - Montague Pt. | 6 | 52 | 7 | 4,590 | X | 300 Sea lions - Zaikof |
| 5-3 | Port Chalmers - Zaikof Bay | 1 | 3 | 0 | 130 | X | |
| 5-4 | Zaikof Bay - Green Island | 5 | 21 | 3 | 1,940 | X | Some fresh spawn |
| 5-6 | Zaikof Bay - Port Chalmers | 0 | 0 | 0 | 0 | | |
| 5-10 | Zaikof Bay - Port Chalmers | 2 | 15 | 0 | 620 | X | Graveyard Pt. |
| EASTERN DISTRICT | | | | | | | |
| 3-29 | Port Gravina - Simpson Bay | 0 | 0 | 0 | 0 | | |
| 4-1 | Port Gravina - St. Matthews | 0 | 0 | 0 | 0 | | |
| 4-6 | Knowles Head - St. Matthews Bay | 0 | 0 | 0 | 0 | | |
| 4-8 | Olsen Bay - Knowles Head | 6 | 12 | 0 | 540 | X | |
| 4-9 | St. Matthews - Knowles Head | 3 | 3 | 0 | 150 | | |
| 4-12 | St. Matthews - Knowles Head | 2 | 0 | 0 | 20 | X | |

¹ Includes observations from all assessment surveys conducted during the season regardless of whether fish were sighted.

² Tonnage estimates based on school size: small - up to 50' in diameter equals 10 tons; medium - 50' to 100' diameter equals 40 tons; large - 100' - 150' diameter equals 350 tons.

Table 52. Summary of peak aerial observations of sac roe herring, by district, Prince William Sound, 1974 - 1983.

| Date | District | Number of Schools Observed | | | Estimated Tonnage ¹ |
|----------------------|---------------------|----------------------------|---------------------------|-----|--------------------------------|
| | | Sm. | Med. | Lg. | |
| <u>1974</u> | | | | | |
| 4/19 | Northern | 100 | 45 | 92 | 35,000 |
| 4/18 | Montague | 1 | 4 | 10 | 3,670 |
| 4/24 | Montague | 3 | 4 | 15 | 5,440 |
| <u>1975</u> | | | | | |
| 4/23 | Northern | 24 | 24 | 0 | 1,200 |
| <u>1976</u> | | | | | |
| 4/14 | Northern | 5 | 7 | 20 | 7,830 |
| <u>1977</u> | | | | | |
| 4/18 | Northern | 18 | 22 extra large schools | 35 | 13,290 3,500 |
| <u>1978</u> | | | | | |
| 4/17 | Northern | 128 | 34 | 13 | 7,230 |
| 5/ 3 | Northern | 47 | 21 | 20 | 8,310 |
| 6/12 | Northern | 150 | 42 | 6 | 5,280 |
| <u>1979</u> | | | | | |
| 4/18 | Eastern | 40 | 34 | 46 | 17,860 |
| 4/20 | Northern | 21 | 13 | 26 | 9,830 |
| 4/28 | Montague | 10 | 5 | 2 | 1,000 |
| 4/28 | Hinchinbrook Island | 18 | 6 | 2 | 1,120 |
| <u>1980</u> | | | | | |
| 4/ 9 | Montague | 12 | 17 | 56 | 20,400 |
| 4/15 | Northern | 62 | 47 | 49 | 24,550 |
| <u>1981</u> | | | | | |
| 3/27 | Eastern | 5 | 6 | 17 | 6,240 |
| 4/12 | Northern | 19 | 21 | 41 | 16,790 |
| 4/23 | Montague | 25 | 27 | 62 | 23,030 |
| <u>1982</u> | | | | | |
| 4/18 | Montague | 6 | 25 | 12 | 5,260 |
| 4/29 | Northern/General | 15 | 115 | 61 | 26,100 |
| 5/ 1 | Eastern | 2 | 6 | 0 | 260 |
| <u>1983</u> | | | | | |
| 4/ 9 | Montague | 77 | 46 | 49 | 19,760 |
| 4/ 9-29 ² | Northern/General | 50 | 149 | 11 | 10,360 |
| 4/ 8 | Eastern | 6 | 12 | 0 | 540 |

-Continued-

Table 52. (Continued)

- ¹ Estimated tonnage based upon school size: Small - up to 50 feet in diameter = 10 tons; Medium - 50 feet to 100 feet in diameter = 40 tons; Large - 100 feet and over in diameter = 350 tons.
- ² Includes combined peak estimates for Glacier-Fairmont Islands (4/9), Naked Island (4/12) and Valdez Arm (4/29).

Table 53. Prince William Sound herring sac roe aerial surveys, peak estimates and seasonal harvests in metric tons, 1974 - 1983.

| Year | Fishing District | Harvest | Peak Estimate |
|------|------------------|--------------------|----------------|
| 1974 | Northern | 2,628 | 35,000 |
| 1975 | " | 990 | 1,200 |
| 1976 | " | No Fishery | 7,830 |
| 1977 | " | 2,071 | 16,790 |
| 1978 | " | 1,210 | 8,310 |
| 1979 | " | 1,032 | 9,830 |
| 1980 | " | 240 | 24,550 |
| 1981 | " | 214 | 16,430 |
| 1982 | Northern/General | 6,789 | 26,100 |
| 1983 | Northern/General | 2,441 ² | 10,360 |
| 1974 | Montague | 3,135 | 9,110 |
| 1975 | " | 4,319 | 0 ¹ |
| 1976 | " | 1,966 | 70 |
| 1977 | " | No Fishery | 120 |
| 1978 | " | " | 60 |
| 1979 | " | " | 1,000 |
| 1980 | " | 4,441 | 20,400 |
| 1981 | " | 9,002 | 23,670 |
| 1982 | " | No Fishery | 5,260 |
| 1983 | " | 130 | 19,760 |
| 1974 | Eastern | No Fishery | 0 ¹ |
| 1975 | " | " | 0 ¹ |
| 1976 | " | 379 | 90 |
| 1977 | " | No Fishery | 0 ¹ |
| 1978 | " | " | 0 ¹ |
| 1979 | " | 2,721 | 17,860 |
| 1980 | " | 509 | 260 |
| 1981 | " | 3,523 | 6,240 |
| 1982 | " | No Fishery | 260 |
| 1983 | " | No Fishery | 540 |

¹ Surveys flown, no herring schools observed.

² Includes purse seine and gill net harvests.

Table 54. Age, Sex & Size frequency of Sac Roe herring captured by seine, Naked Island, Prince William Sound 4/13/83.

| Age Group | Year Class | Males | | | Females | | | Combined Sexes | |
|----------------|------------|-----------|------|-------|-----------|------|-------|----------------|-------|
| | | Frequency | | Mean | Frequency | | Mean | Number | % |
| | | Number | % | | Number | % | | | |
| III | 1980 | 32 | 14.2 | 185.5 | 27 | 12.9 | 185.5 | 59 | 13.6 |
| IV | 1979 | 27 | 12.0 | 193.3 | 11 | 5.3 | 200.6 | 38 | 8.7 |
| V | 1978 | 23 | 10.2 | 202.4 | 20 | 9.6 | 206.3 | 43 | 9.9 |
| VI | 1977 | 30 | 13.3 | 213.0 | 40 | 19.1 | 215.8 | 70 | 16.1 |
| VII | 1976 | 106 | 47.0 | 216.5 | 99 | 47.4 | 220.0 | 205 | 47.1 |
| VIII | 1975 | 5 | 2.1 | 212.4 | 12 | 5.7 | 220.1 | 17 | 3.9 |
| IX | 1974 | 3 | 1.2 | 228.0 | - | - | - | 3 | .7 |
| X | 1973 | | | | | | | | |
| Total N. | | 226 | | | 209 | | | 435 | 100% |
| Average Length | | | | 207.5 | | | 212.3 | | |
| Average Weight | | | | | | | | 135.2 | 150.5 |

Sex Composition: Males = 52%
Females = 48%

Table 55. Age, Sex & Size frequency of sac roe herring captured by commercial seine, Rocky Bay, Montague Dist., 1983.

| Age Group | Year Class | Males | | | Females | | | Combined Sexes | |
|----------------|------------|-----------|------|-----------|--------------|----|-----------|----------------|---------|
| | | Frequency | | Mean | Frequency | | Mean | Number | % |
| | | Number | % | | Number | % | | | |
| | | | | Length mm | Weight grams | | Length mm | Weight grams | |
| III | 1980 | 9 | 19.6 | 179.8 | 78.0 | 18 | 184.8 | 90.5 | 27 27.8 |
| IV | 1979 | 4 | 8.7 | 191.8 | 92.0 | 5 | 194.2 | 105.5 | 9 9.3 |
| V | 1978 | 7 | 15.2 | 208.6 | 133.7 | 7 | 199.2 | 107.5 | 14 14.4 |
| VI | 1977 | 5 | 10.9 | 213.2 | 167.0 | 8 | 212.1 | 153.5 | 13 13.4 |
| VII | 1976 | 20 | 43.5 | 217.7 | 150.0 | 12 | 218.7 | 163.1 | 32 33.0 |
| VIII | 1975 | 1 | 2.2 | 223.0 | 154.0 | 1 | 222.0 | 176.0 | 2 2.1 |
| IX | 1974 | | | | | | | | |
| X | 1973 | | | | | | | | |
| Total Number | | 46 | | | | 51 | | | 97 100% |
| Average Length | | | | 206.6 | | | 201.4 | | |
| Average Weight | | | | | 191.8 | | | 126.3 | |

Sex Composition: Males 47.4
Females 52.6

Table 57. Age, Sex & Size frequency of herring captured for pound fishery by seine at Galena Bay, Prince William Sound, 1983.

| Age Group | Year Class | Males | | | Females | | | Combined Sexes | |
|------------------|------------|--------------------------------|------|-----------|--------------|-----|-----------|----------------|------|
| | | Frequency | | Mean | Frequency | | Mean | Number | % |
| | | Number | % | | Number | % | | | |
| | | | | Length mm | Weight grams | | Length mm | Weight grams | |
| III | 1980 | 64 | 24.3 | 176.2 | 70.8 | 32 | 184.0 | 104.3 | 25.0 |
| IV | 1979 | 48 | 18.3 | 196.5 | 93.4 | 19 | 191.8 | * | 17.8 |
| V | 1978 | 15 | 23.8 | 195.2 | 109.2 | 8 | 202.9 | * | 6.0 |
| VI | 1977 | 36 | 13.7 | 203.7 | 109.6 | 16 | 205.6 | 146.0 | 13.5 |
| VII | 1976 | 91 | 34.6 | 214.2 | 135.3 | 39 | 213.7 | 149.9 | 33.9 |
| VIII | 1975 | 8 | 3.0 | 224.6 | 152.7 | 5 | 216.6 | 154.0 | 3.4 |
| IX | 1974 | 1 | .4 | 230.0 | 0* | 2 | 212 | * | .8 |
| X | 1973 | | | | | | | | |
| Total N | | 263 | | | | 121 | | | 100% |
| Average Length | | | | 199.3 | | | 201.2 | | |
| Average Weight | | | | | 111.6 | | | 135.8 | |
| Sex Composition: | | Males = 68.5 Females = 31.5 | | | | | | | |

* Pound samples; spawned out; prespawning weights not available.

Table 58. Age, length, weight composition of Sac Roe Herring taken by Seine at Rocky Bay & Port Chalmers, Prince William Sound, 1983.

| Age Group | Year Class | Males | | | Females | | | Combined Sexes | | |
|-----------------|------------|----------------------------------|------|-----------|--------------|-----------|------|----------------|--------------|----------|
| | | Frequency | | Mean | | Frequency | | Mean | | |
| | | Number | % | Length mm | Weight grams | Number | % | Length mm | Weight grams | |
| III | 1980 | 22 | 14.3 | 178.0 | 82.9 | 12 | 9.3 | 180.3 | 84.8 | 34 12.1 |
| IV | 1979 | 20 | 13.0 | 185.7 | 83.0 | 22 | 17.2 | 191.5 | 98.0 | 42 14.9 |
| V | 1978 | 18 | 11.7 | 208.6 | 120.0 | 15 | 11.6 | 205.6 | 125.3 | 33 11.7 |
| VI | 1977 | 26 | 16.8 | 223.0 | 146.4 | 29 | 22.7 | 217.1 | 146.0 | 55 19.5 |
| VII | 1976 | 62 | 40.2 | 220.5 | 150.3 | 45 | 35.2 | 219.9 | 164.7 | 107 37.9 |
| VIII | 1975 | 5 | 3.3 | 225.8 | 160.6 | 4 | 3.1 | 226.7 | 170.0 | 9 3.2 |
| IX | 1974 | 1 | .7 | 220.0 | 118.0 | 1 | .9 | 224.0 | 188.0 | 2 .7 |
| Total Number | | 154 | | | | 128 | | | | 282 |
| Average Length | | | | 209.3 | | | | 209.0 | | |
| Average Weight | | | | | 128.1 | | | | 136.8 | |
| Sex Composition | | Males - 54.6% Females - 45.4% | | | | | | | | |

Table 59. Age, Sex & Size frequency, Sac Roe herring taken by test gillnet, Port Chalmers, Montague District, 1983

| Age Group | Year Class | Males | | | Females | | | Combined Sexes | |
|----------------|------------|-----------|------|-------|-----------|------|-------|----------------|-------|
| | | Frequency | | Mean | Frequency | | Mean | Number | % |
| | | Number | % | | Number | % | | | |
| III | 1980 | 4 | 5.5 | 192.3 | 0 | | | 4 | 4.8 |
| IV | 1979 | 3 | 4.1 | 199.7 | 1 | 10.0 | 206.0 | 4 | 4.8 |
| V | 1978 | 12 | 16.4 | 211.0 | 2 | 20.0 | 211.0 | 14 | 16.9 |
| VI | 1977 | 20 | 27.4 | 218.5 | 2 | 20.0 | 222.5 | 22 | 26.5 |
| VII | 1976 | 30 | 41.1 | 222.8 | 5 | 50.0 | 231.2 | 35 | 42.2 |
| VIII | 1975 | 4 | 5.5 | 225.5 | 0 | | | 4 | 4.8 |
| IX | 1974 | | | | | | | | |
| X | 1973 | | | | | | | | |
| Total N | | 73 | | | 10 | | | 83 | 100.0 |
| Average Length | | | | 217.2 | | | 222.9 | | |
| Average Weight | | | | 133.2 | | | | 136.7 | |

Sex Composition: Males: 88%
Females: 22%

Table 60. Calendar weeks used in reporting catch statistics in 1983.

| Weeks | From | Through | Weeks | From | Through |
|-------|--------|---------|-------|---------|---------|
| 1 | Jan. 1 | 1 | 29 | July 10 | 16 |
| 2 | 2 | 8 | 30 | 17 | 23 |
| 3 | 9 | 15 | 31 | 24 | 30 |
| 4 | 16 | 22 | 32 | 31 | Aug. 6 |
| 5 | 23 | 29 | 33 | Aug. 7 | 13 |
| 6 | 30 | Feb. 5 | 34 | 14 | 20 |
| 7 | Feb. 6 | 12 | 35 | 21 | 27 |
| 8 | 13 | 19 | 36 | 28 | Sept. 3 |
| 9 | 20 | 26 | 37 | Sept. 4 | 10 |
| 10 | 27 | Mar. 5 | 38 | 11 | 17 |
| 11 | Mar. 6 | 12 | 39 | 18 | 24 |
| 12 | 13 | 19 | 40 | 25 | Oct. 1 |
| 13 | 20 | 26 | 41 | Oct. 2 | 8 |
| 14 | 27 | Apr. 2 | 42 | 9 | 15 |
| 15 | Apr. 3 | 9 | 43 | 16 | 22 |
| 16 | 10 | 16 | 44 | 23 | 29 |
| 17 | 17 | 23 | 45 | 30 | Nov. 5 |
| 18 | 24 | 30 | 46 | Nov. 6 | 12 |
| 19 | May 1 | 7 | 47 | 13 | 19 |
| 20 | 8 | 14 | 48 | 20 | 26 |
| 21 | 15 | 21 | 49 | 27 | Dec. 3 |
| 22 | 22 | 28 | 50 | Dec. 4 | 10 |
| 23 | 29 | June 4 | 51 | 11 | 17 |
| 24 | June 5 | 11 | 52 | 18 | 24 |
| 25 | 12 | 18 | 53 | 25 | 31 |
| 26 | 16 | 25 | | | |
| 27 | 26 | July 2 | | | |
| 28 | July 3 | 9 | | | |

Table 61. Average price paid to fishermen for salmon and herring in Prince William Sound, 1978-1983¹.

| Species | 1978 | 1979 | 1980 | 1981 | 1982 ⁶ | 1983 ⁶ |
|----------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|
| King Salmon | \$1.39 | \$1.62 | \$1.40 | \$1.65 ⁷ | \$1.40 | \$1.05 |
| Sockeye Salmon | | | | | | |
| Copper River | 1.23 | 1.40 | .85 | 1.40 ⁷ | 1.01 | .95 |
| Bering River | | | | | .80 | .95 |
| Coghill District | | | | | .80 | .85 |
| Unakwik District | | | | | .80 | .85 |
| Coho Salmon | | | | | | |
| Copper-Bering Rivers | 1.10 | 1.10 | .95 | .95 | .86 ¹⁰ | .75 ¹³ |
| Prince William Sound | .39 | .39 | .39 | .39 | .40 | .30 |
| Pink Salmon | .3701 ² | .3777 ³ | .4229 ⁴ | .44 | .23 | .24 |
| Chum Salmon | .4258 | .53 | .50 | .50 | .38 | .24 |
| Herring | | | | | | |
| Sac Roe | .363 | .625 | .1625 | .20 ⁸ | .184 ¹¹ | .31 ¹⁴ |
| Spawn on Kelp | 1.247 | 1.74 | 1.09 ⁵ | 1.00 ⁹ | 1.29 ¹² | 2.10 ¹⁵ |
| Bait | .189 | .15 | .15 | .125 | .109 | .125 |

¹ Source: Processors Annual Reports. Prices are per pound unless indicated.

² The egg recovery adjustment paid was .007 percent.

³ The egg recovery adjustment paid was \$.07275 per pound.

⁴ The egg recovery adjustment paid was \$.0642 per pound.

⁵ Based on average prices of \$.85 for sieve kelp (40% of production) and \$1.25 for ribbon kelp (60% of production).

⁶ Preliminary

⁷ Contract price was \$1.25 for sockeyes and \$1.40 for kings, but payments from cash buyers raised the average price to approximately this level.

⁸ Based on estimated \$400/ton for 9% recovery seine caught fish while gill net recoveries were about 13% and prices averaged \$550-600/ton.

⁹ Based on average price of \$.85 for sieve kelp (60% of production), \$1.25 for ribbon kelp (38% of production) and \$.60 for hair kelp (2% of production).

¹⁰ The settlement price reached for coho salmon caught in Prince William Sound was \$.30 and \$.90 for Copper River and Bering River before September 5 and \$.75 after that date.

¹¹ Prices ranged from \$325-425/ton for seine caught fish while gill net prices ranged from \$590-705/ton.

¹² Based on average price of \$.95 for sieve kelp (11% of production), \$1.42 for ribbon kelp (83% of production) and \$.74 for hair kelp (6% of production).

(Continued)

- ¹³The price reached for coho salmon caught in Prince William Sound was \$.30 and \$.60-.85 for Copper River and Bering River districts.
- ¹⁴Prices ranged from \$500-600/ton for 10% roe recovery from seine caught fish while gillnet prices ranged from \$950-1,000/ton for 10% roe recovery. Actual roe recovery averaged about 11% from both purse seine and gillnet.
- ¹⁵Based on average price of \$1.50-1.70 for sieve kelp (35% of production), \$2.00-2.45 for ribbon kelp (51% of production) \$1.00-1.25 for hair kelp (1% of production) and \$3.00 for Macrocystis sp. (13% of production).

Table 62. Average price paid per pound for salmon, shellfish and miscellaneous fish in the Prince William Sound Area, 1983.

| Salmon | | | | | |
|---------------------|--------------------------|---------------------------|--------------|--------------------|--------------------|
| King | Sockeye | Coho | Pink | | Chum |
| \$1.05 | \$.85 - .95 ¹ | \$.30 - .85 ² | \$.24 | | \$.24 |
| | | | | | |
| Shellfish | | | | | |
| King Crab | Dungeness Crab | Tanner Crab | Shrimp Trawl | Pot | Razor Clams (Bait) |
| \$3.30-4.00 | \$.85-1.25 | \$1.10-1.35 | .35 | \$4.00-6.00 | \$1.00 |
| | | | | | |
| Miscellaneous Fish | | | | | |
| Herring Sac Roe | Herring Spawn on Kelp | Herring (Bait) | Halibut | Bottom Fish (Bait) | Octopus (Bait) |
| \$.31 ³ | \$2.10 ⁴ | \$.125 | \$1.05 | \$.40 | \$.75 |

¹ Contract price was \$.95 for sockeye from the Copper River and Bering River district and \$.85 from the Coghill and Unakwik Districts.

² The price reached for coho salmon caught in Prince William Sound was \$.30 and \$.60-.85 for Copper River and Bering River districts.

³ Prices ranged from \$500-600/ton for 10% roe recovery from seine caught fish while gillnet prices ranged from \$950-1,000/ton for 10% roe recovery. Actual roe recovery averaged about 11% from both purse seine and gillnet.

⁴ Based on average price of \$1.50-1.70 for sieve kelp (35% of production), \$2.00-2.45 for ribbon kelp (51% of production) \$1.00-1.25 for hair kelp (1% of production) and \$3.00 for Macrocystis sp. (13% of production).

Table 63. Average weight in pounds of salmon in commercial catches from the Prince William Sound Area, 1974 - 1983. ¹

| Year | King | Sockeye | Coho | Pink | Chum |
|-----------------------------|------|---------|------|------|------|
| COPPER RIVER - BERING RIVER | | | | | |
| 1974 | 33.4 | 6.8 | 9.1 | 4.7 | 7.9 |
| 1975 | 27.8 | 6.6 | 9.3 | 5.3 | 6.0 |
| 1976 | 28.4 | 6.8 | 10.2 | 4.3 | 7.4 |
| 1977 | 28.4 | 7.3 | 10.6 | 4.6 | 7.3 |
| 1978 | 27.3 | 6.2 | 9.3 | 4.2 | 7.0 |
| 1979 | 27.4 | 6.9 | 9.2 | 4.4 | 7.9 |
| 1980 | 29.1 | 6.7 | 9.8 | 4.8 | 7.1 |
| 1981 | 25.9 | 6.4 | 10.3 | 4.6 | 7.5 |
| 1982 | 26.8 | 6.5 | 9.9 | 4.2 | 8.8 |
| 1983 | 26.8 | 6.1 | 9.8 | 4.0 | 7.5 |
| 10 Year Average | 28.1 | 6.7 | 9.7 | 4.5 | 7.4 |
| PRINCE WILLIAM SOUND | | | | | |
| 1974 | 13.3 | 7.3 | 8.2 | 4.7 | 9.0 |
| 1975 | 11.2 | 7.6 | 7.9 | 3.6 | 7.2 |
| 1976 | 11.5 | 7.4 | 8.4 | 4.2 | 9.1 |
| 1977 | 15.1 | 7.9 | 8.1 | 4.4 | 9.0 |
| 1978 | 12.3 | 8.1 | 8.5 | 3.6 | 8.5 |
| 1979 | 11.0 | 7.1 | 7.9 | 3.7 | 9.1 |
| 1980 | 14.6 | 6.9 | 8.3 | 3.3 | 8.3 |
| 1981 | 17.5 | 6.3 | 8.1 | 4.2 | 8.6 |
| 1982 | 15.8 | 7.1 | 8.2 | 3.7 | 9.1 |
| 1983 | 15.3 | 6.5 | 7.0 | 3.0 | 9.2 |
| 10 Year Average | 13.7 | 7.2 | 8.0 | 3.8 | 8.7 |

¹ Data from Alaska Department of Fish and Game Commercial Fisheries Statistical Leaflets in 1974 and 1975 while all other years are from fish ticket data. Data from Prince William Sound includes all districts and gear types.

² General purse seine season closed.

³ Preliminary.

Table 64 . Prince William Sound Area case pack and pounds of frozen, fresh, cured and exported salmon by species, 1974-1983¹.

| Cases | | | | | | |
|-------|-------|---------|--------|---------|---------|-----------|
| Year | King | Sockeye | Coho | Pink | Chum | Total |
| 1974 | 1,507 | 68,576 | 14,127 | 30,335 | 10,925 | 125,470 |
| 1975 | 183 | 24,281 | 1,254 | 133,358 | 6,266 | 165,342 |
| 1976 | 151 | 99,436 | 5,564 | 121,762 | 2,302 | 229,215 |
| 1977 | 253 | 41,860 | 2,420 | 178,151 | 38,850 | 261,534 |
| 1978 | 139 | 15,664 | 4,482 | 117,863 | 39,376 | 177,524 |
| 1979 | 158 | 3,669 | 3,970 | 474,084 | 24,347 | 506,228 |
| 1980 | 215 | 46,716 | 3,059 | 384,353 | 42,813 | 477,156 |
| 1981 | 167 | 65,067 | 3,202 | 776,515 | 181,714 | 1,026,665 |
| 1982 | 128 | 7,919 | 2,669 | 512,046 | 15,847 | 538,609 |
| 1983 | 158 | 25,974 | 5,649 | 466,579 | 36,416 | 534,776 |

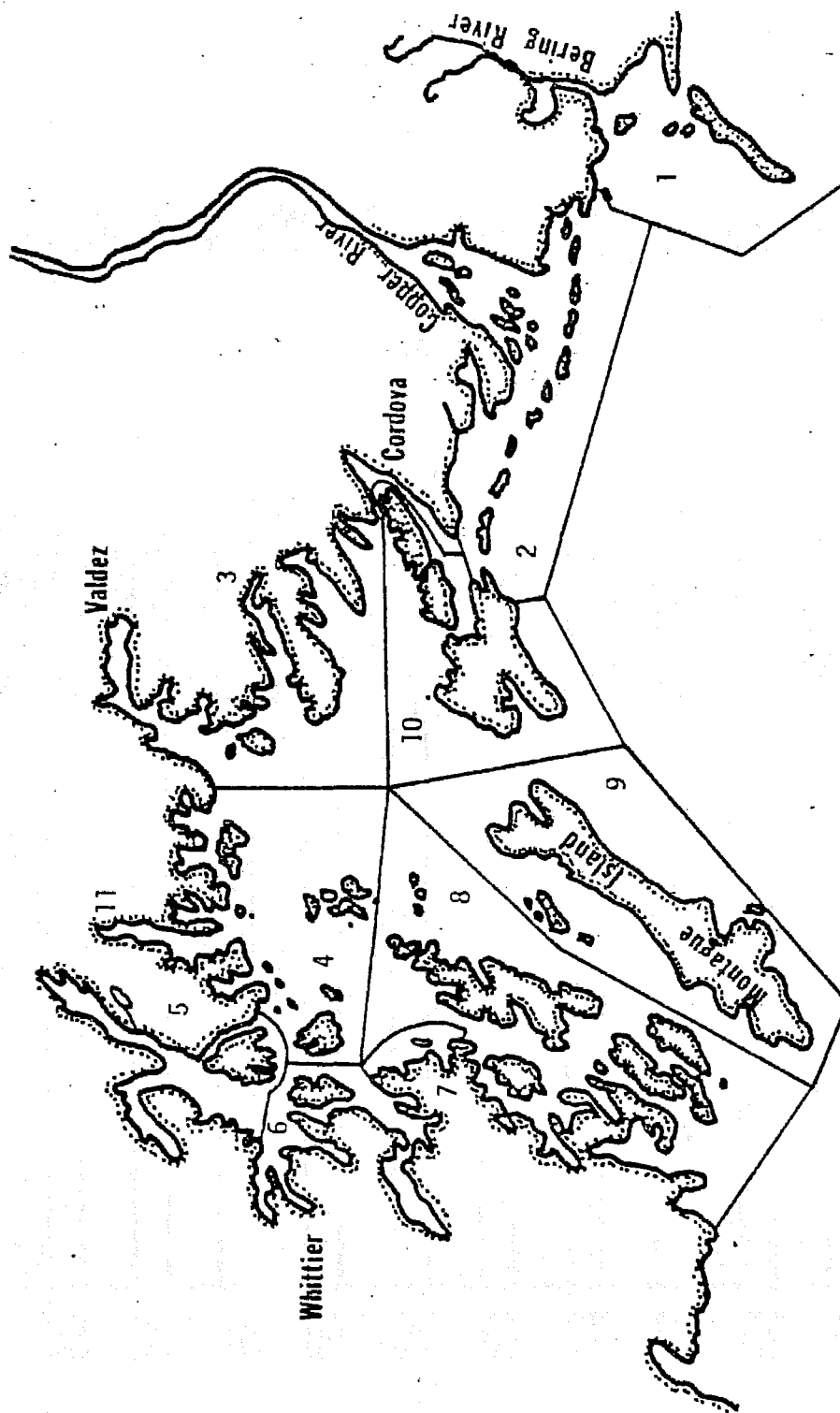
| Frozen | | | | | | |
|--------|---------|-----------|-----------|------------|-----------|------------|
| 1974 | 408,662 | 62,725 | 2,620 | 0 | 1,187 | 475,194 |
| 1975 | 293,657 | 553,541 | 564,579 | 0 | 63,154 | 1,474,931 |
| 1976 | 758,172 | 1,294,110 | 918,509 | 351,944 | 514,854 | 3,837,589 |
| 1977 | 356,567 | 2,741,166 | 861,761 | 1,232,766 | 931,911 | 6,124,171 |
| 1978 | 581,353 | 2,518,147 | 1,690,871 | 229,744 | 705,796 | 5,725,911 |
| 1979 | 302,419 | 1,466,938 | 1,782,175 | 1,769,191 | 305,315 | 5,626,038 |
| 1980 | 176,124 | 347,049 | 865,893 | 76,891 | 433,536 | 1,899,493 |
| 1981 | 404,325 | 2,721,666 | 1,786,850 | 398,519 | 1,255,362 | 6,566,722 |
| 1982 | 794,168 | 8,617,152 | 3,505,937 | 14,362,966 | 5,117,228 | 32,397,451 |
| 1983 | 925,157 | 4,165,433 | 2,276,977 | 2,496,825 | 3,744,843 | 13,609,235 |

| Fresh | | | | | | |
|-------|---------|-----------|-----------|-----------|-----------|-----------|
| 1983 | 549,247 | 1,697,993 | 1,081,751 | 3,752,126 | 2,538,728 | 9,619,845 |

| Cured | | | | | | |
|-------|--|-----|--------|--|--|--------|
| 1983 | | 610 | 95,467 | | | 96,077 |

| Exported | | | | | | |
|----------|-------|--------|-------|-----------|---------|-----------|
| 1983 | 1,338 | 21,031 | 7,274 | 2,805,811 | 671,176 | 3,506,630 |

¹ Case pack on the basis of 48 one pound cans per case. Frozen, fresh and exported salmon in round weight 1973-1977. From 1978-1982 fresh and frozen salmon reported in processed weight, in 1983 reported in round weight. Cured and salmon exported to other areas for processing were reported in round weight for all years.



Fishing Districts

- | | |
|-----------------|------------------|
| 1. Bering River | 6. Northwestern |
| 2. Copper River | 7. Eshamy |
| 3. Eastern | 8. Southwestern |
| 4. Northern | 9. Montague |
| 5. Coghill | 10. Southeastern |
| | 11. Unakwik |

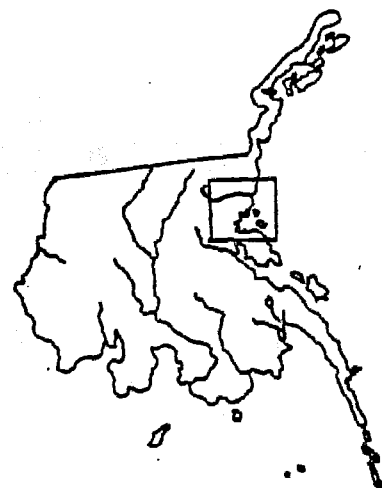


Figure 1. Prince William Sound Area commercial fisheries salmon management areas.

ALL SPECIES SALMON CATCH, PRINCE WILLIAM SOUND

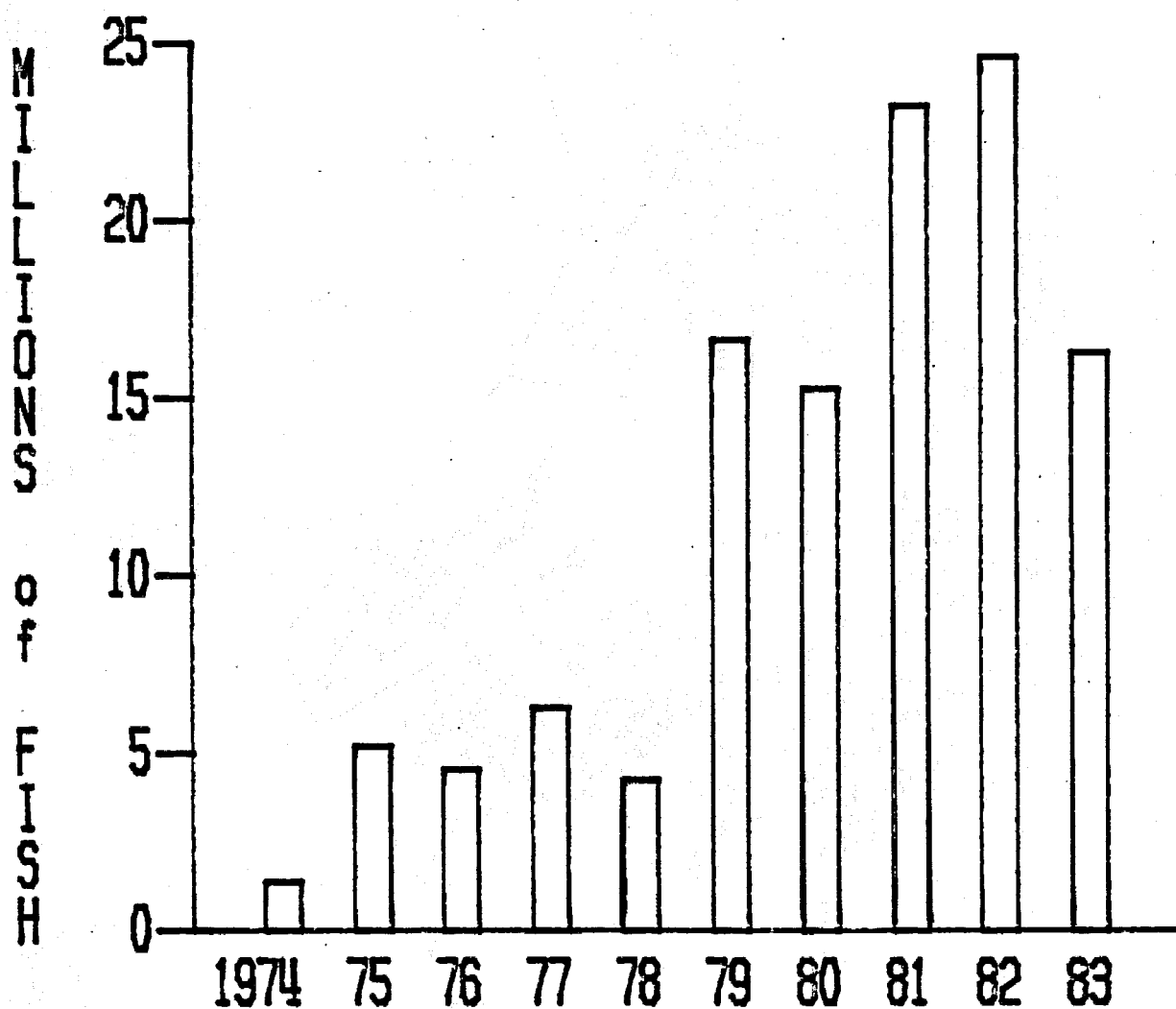


Figure 2. All species salmon catch, Prince William Sound, 1974 - 1983.

CHINOOK SALMON CATCH, COPPER RIVER DISTRICT

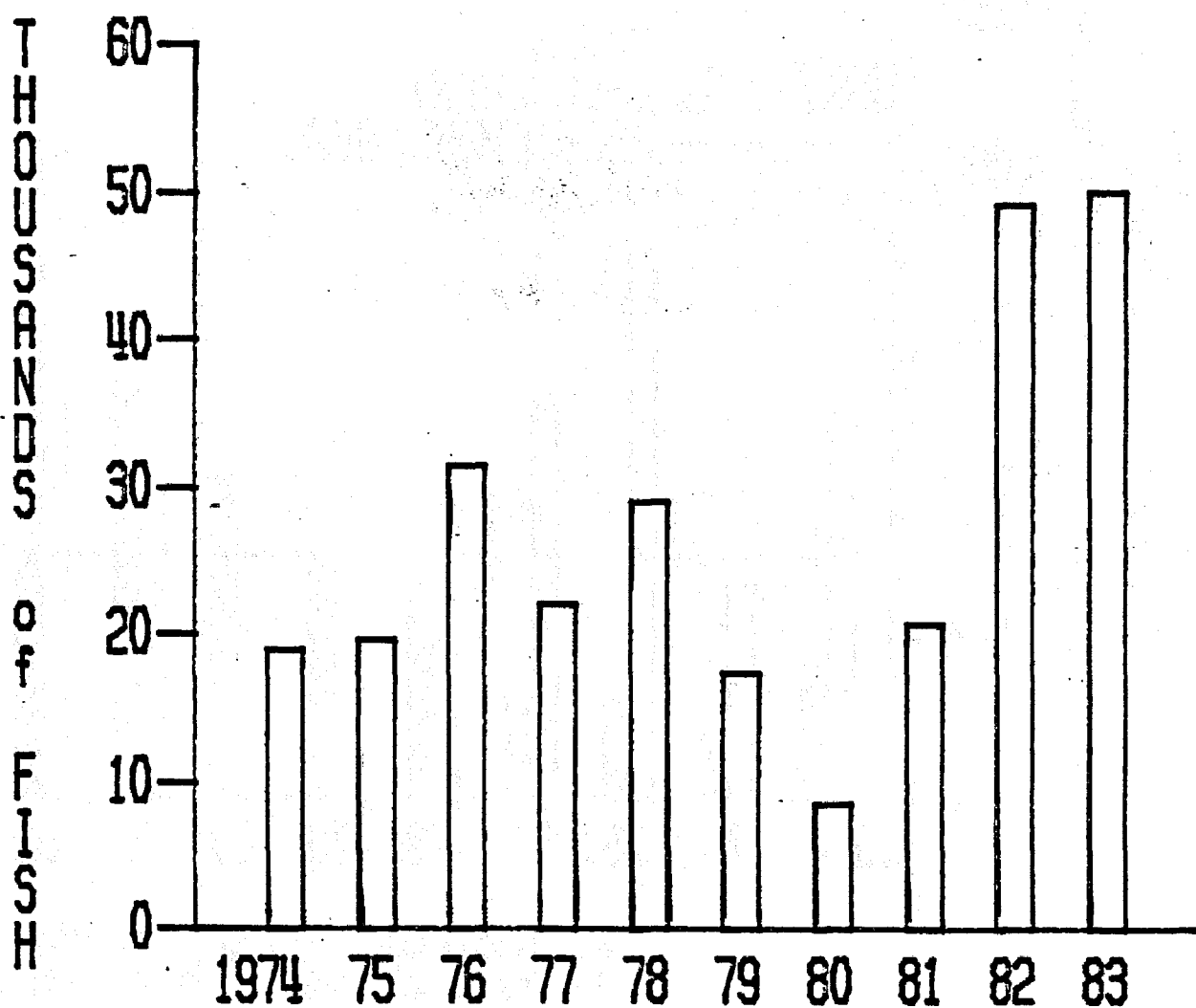
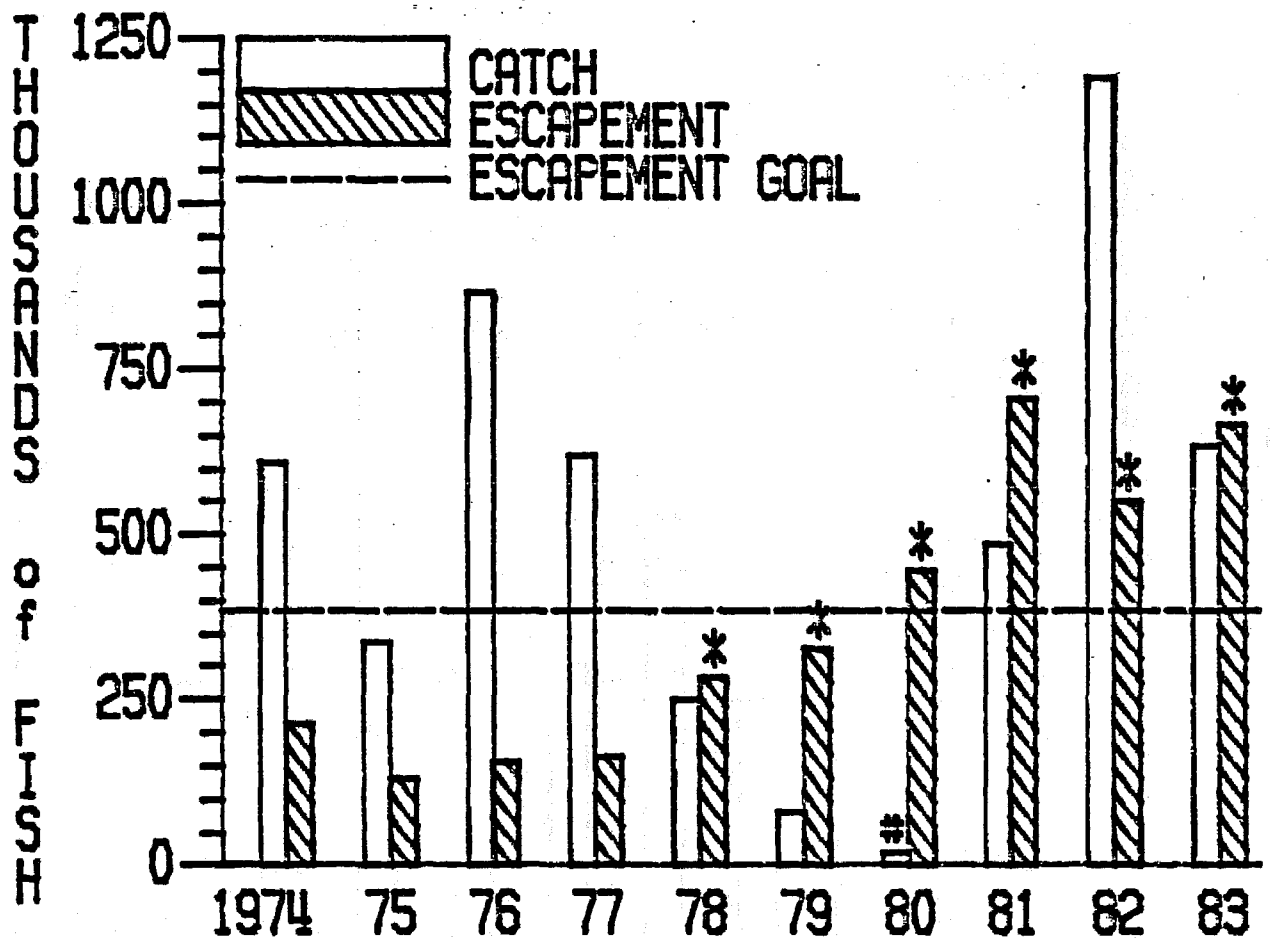


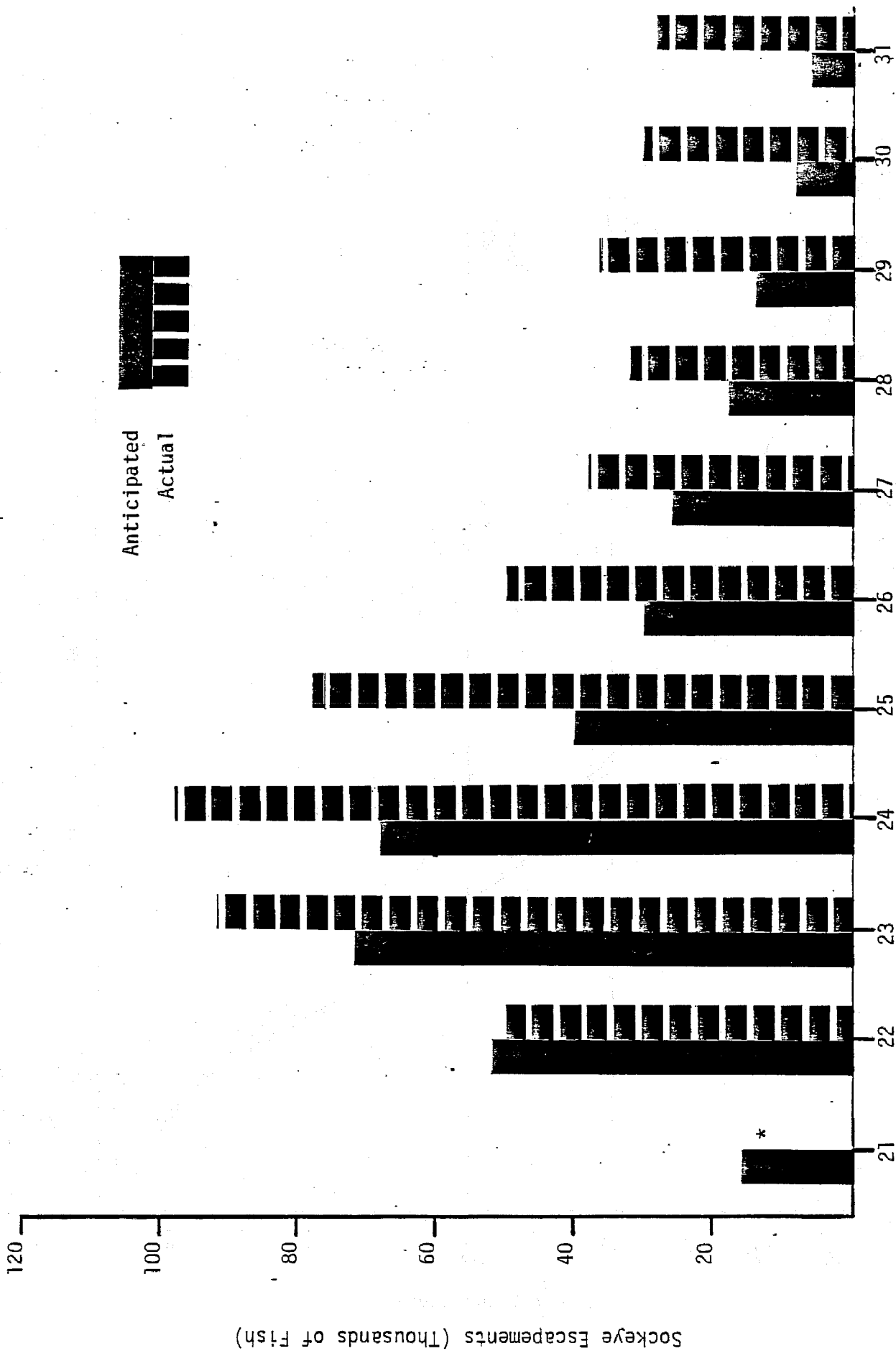
Figure 3. Chinook salmon catch, Copper River district, 1974 - 1983.

SOCKEYE SALMON CATCH and ESCAPEMENT COPPER RIVER DISTRICT



* includes sonar counts
no sockeye fishery in 1980

Figure 4. Sockeye salmon catch and escapement, Copper River district, 1974 - 1983.



*Counter not operating

Figure 5. Sockeye Salmon escapement by week at Miles Lake Sonar Counter, Copper River, 1983.

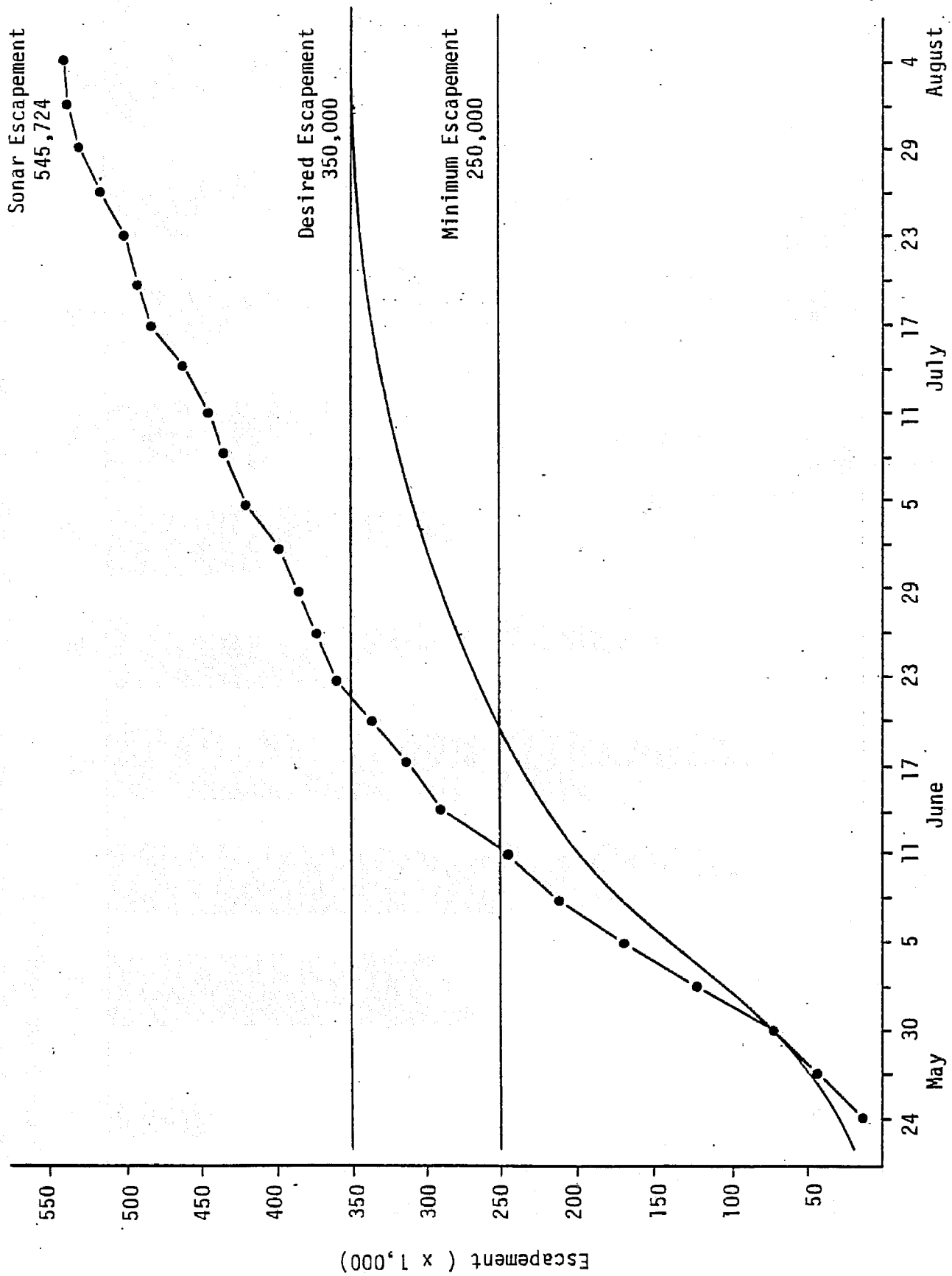


Figure 6 . Expected and actual Copper River sonar counts of salmon at Miles Lake, 1983.

-001-
Sockeye Catch (Thousands of Fish)

150

125

100

75

50

25

Actual
Anticipated

21

22

23

24

25

26

27

28

29

30

31

Figure 7. Sockeye Salmon Catch by week Copper River District, 1983.

COHO SALMON CATCH, COPPER RIVER DISTRICT

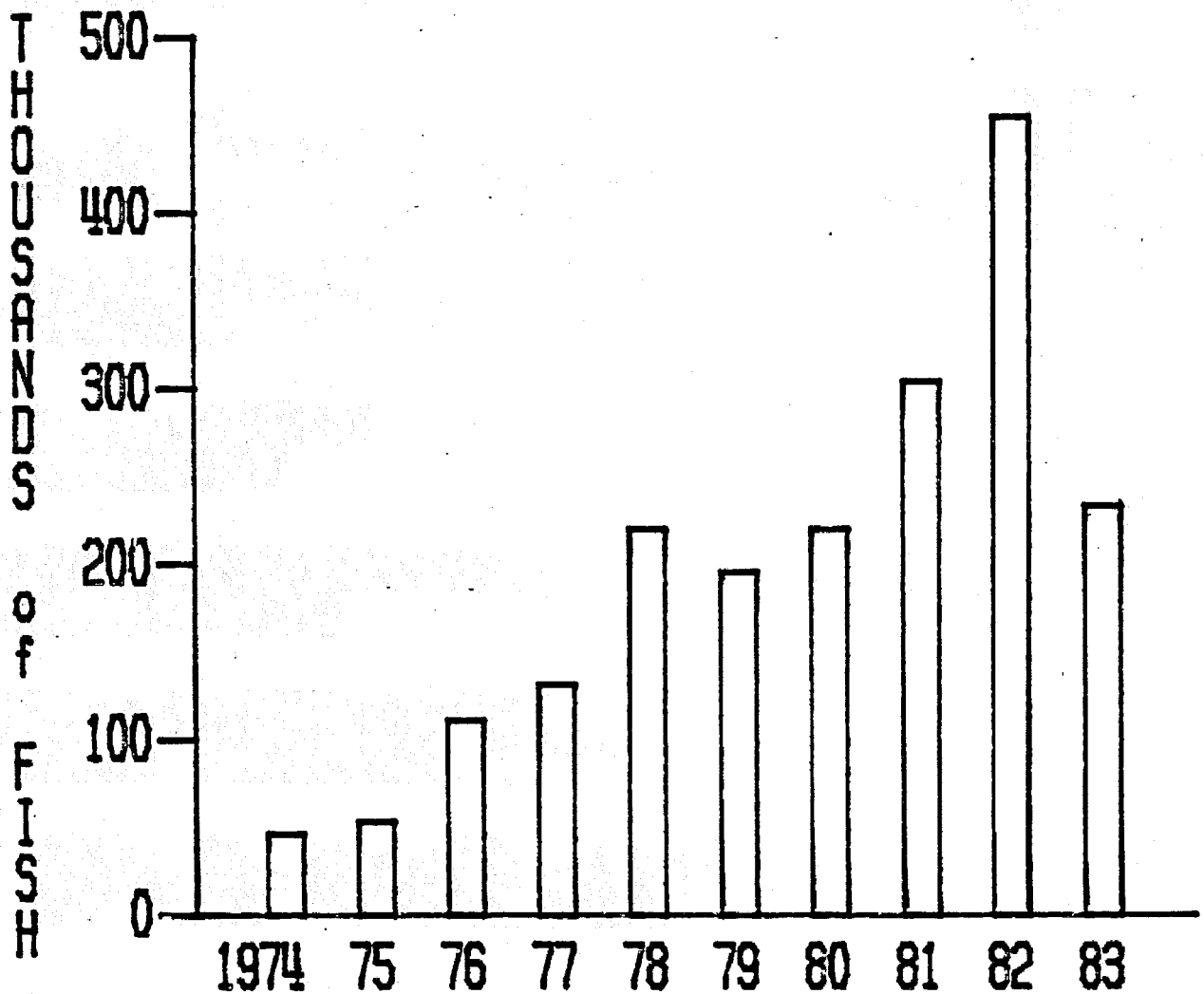


Figure 8. Coho salmon catch, Copper River district, 1974 - 1983.

SOCKEYE SALMON CATCH and ESCAPEMENT BERING RIVER DISTRICT

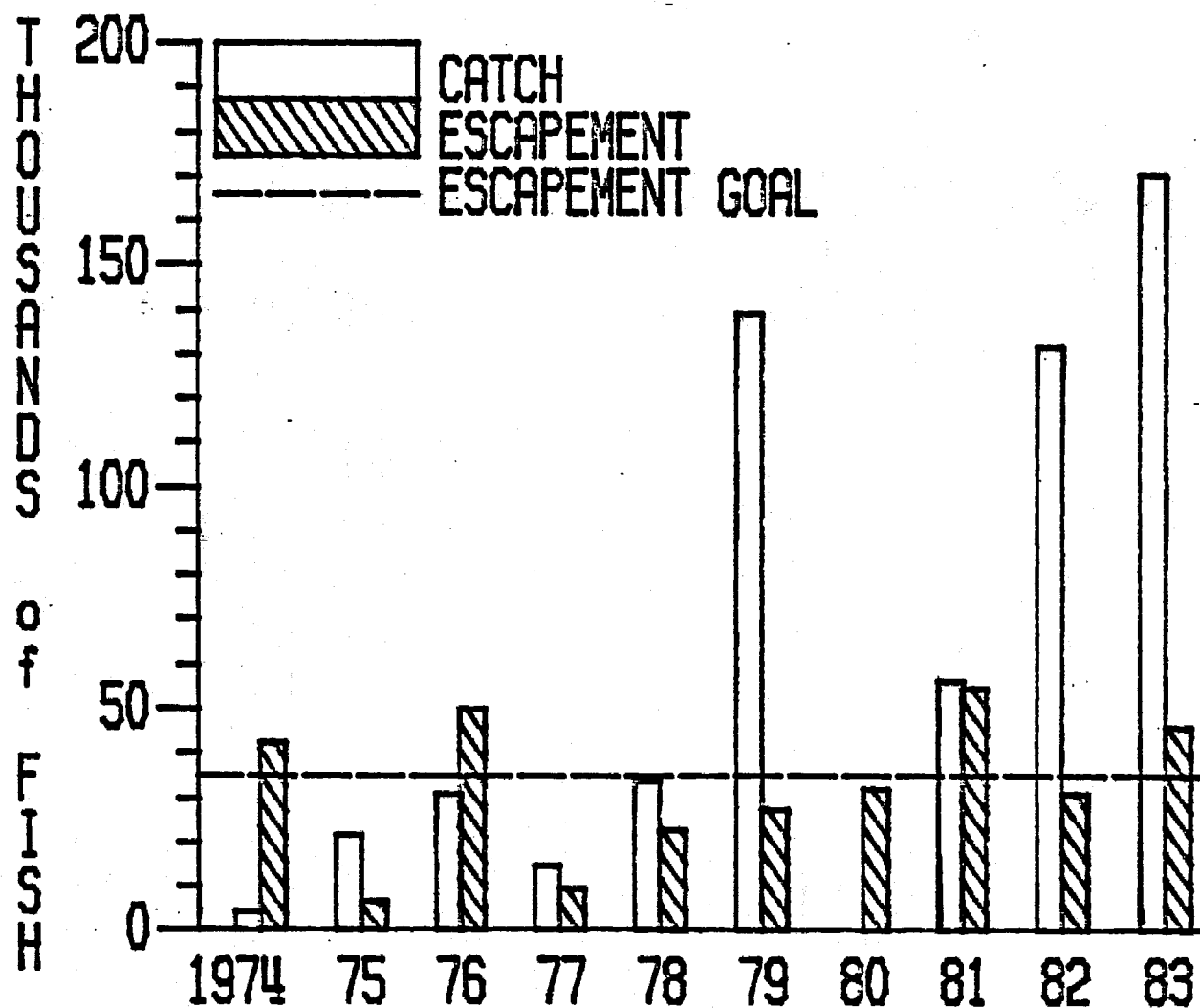


Figure 9. Sockeye salmon catch and escapement, Bering River district, 1974-83.

COHO SALMON CATCH, BERING RIVER DISTRICT

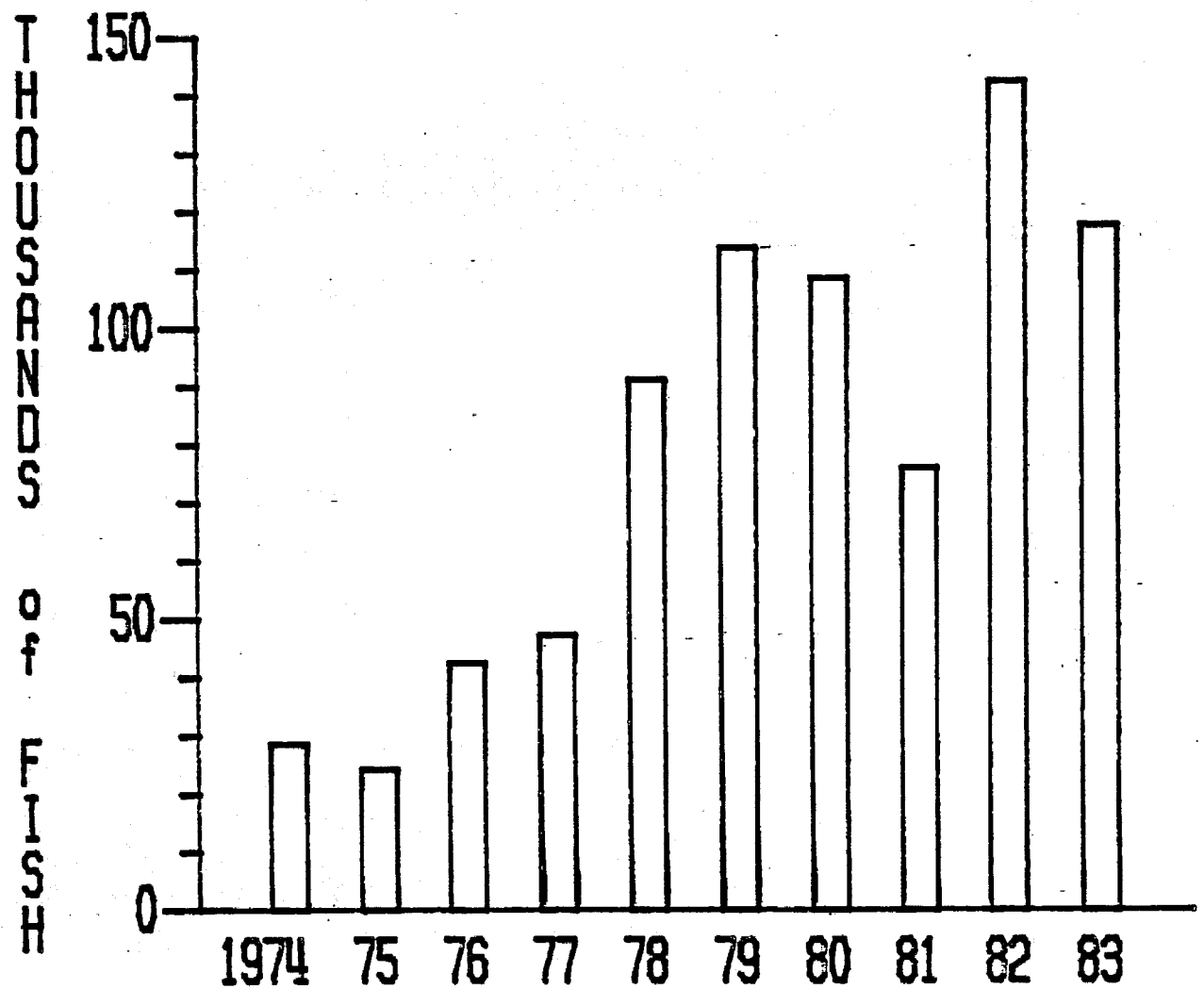
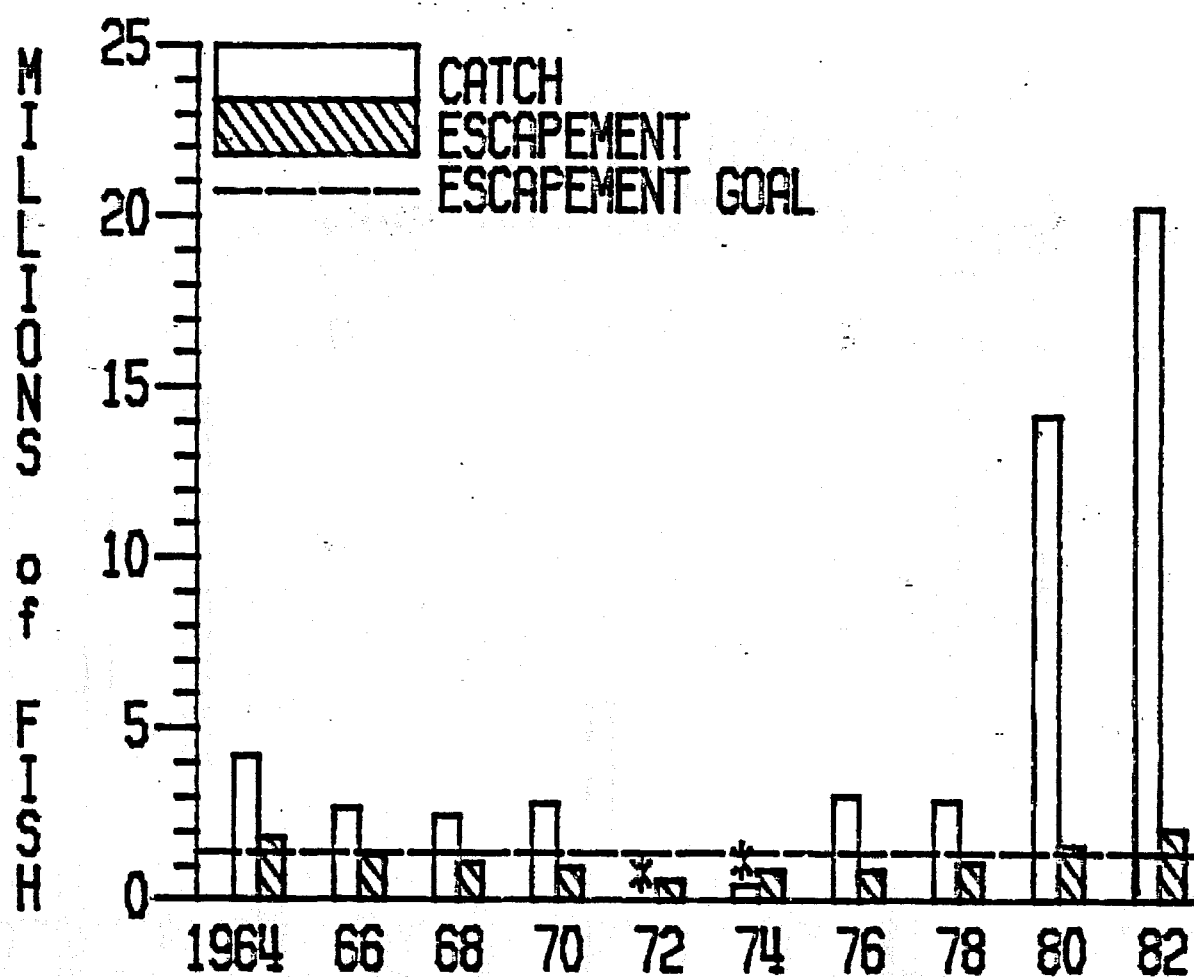


Figure 10. Coho salmon catch, Bering River district, 1974 - 1983.

PINK SALMON CATCH and ESCAPEMENT, EVEN YEARS PRINCE WILLIAM SOUND



* general purse seine season closed

Figure 11. Pink salmon catch and escapement, even years, Prince William Sound, 1964 - 1982.

PINK SALMON CATCH and ESCAPEMENT, ODD YEARS PRINCE WILLIAM SOUND

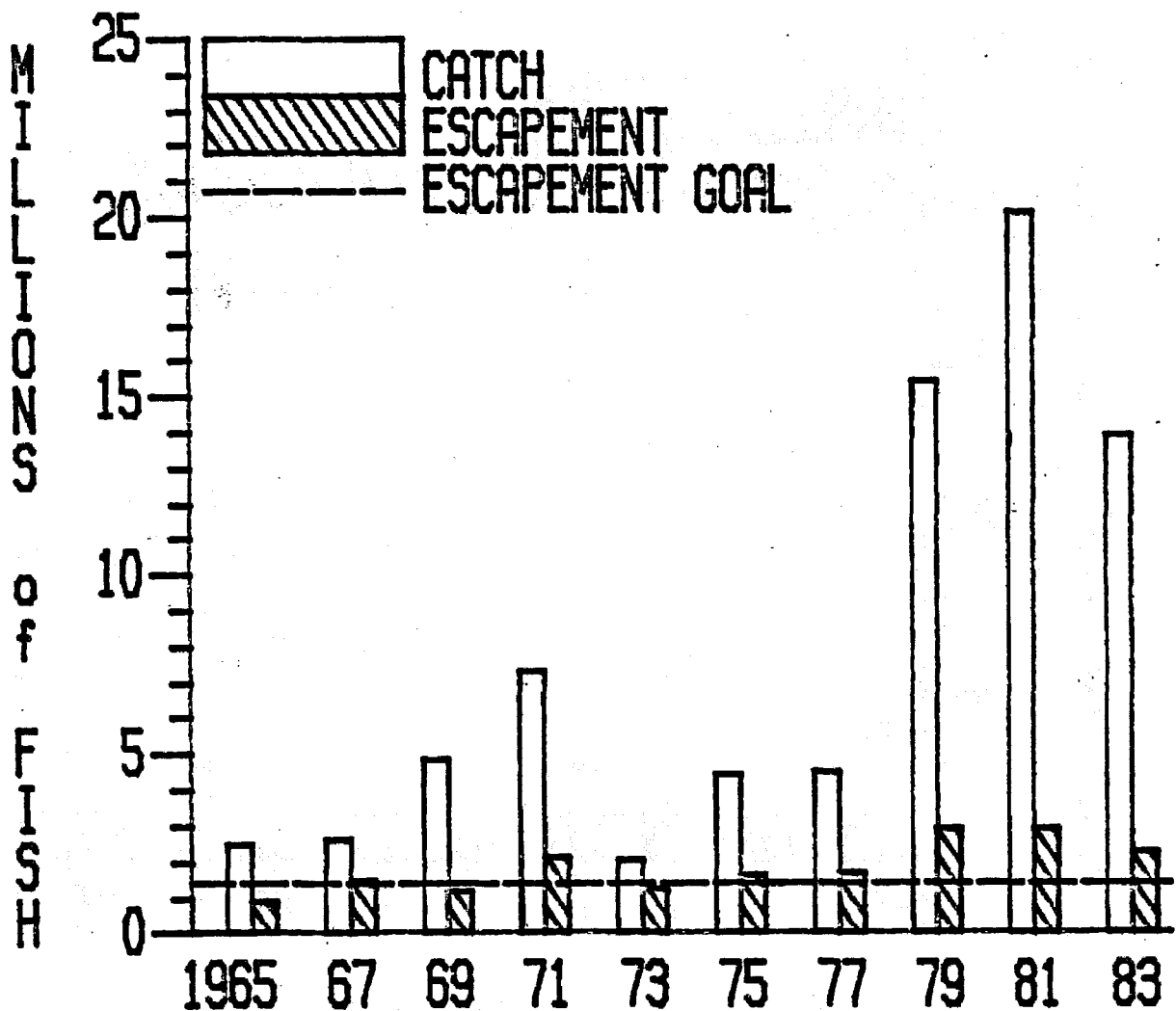


Figure 12. Pink salmon catch and escapement, odd years, Prince William Sound, 1965 - 1983.

CHUM SALMON CATCH and ESCAPEMENT PRINCE WILLIAM SOUND

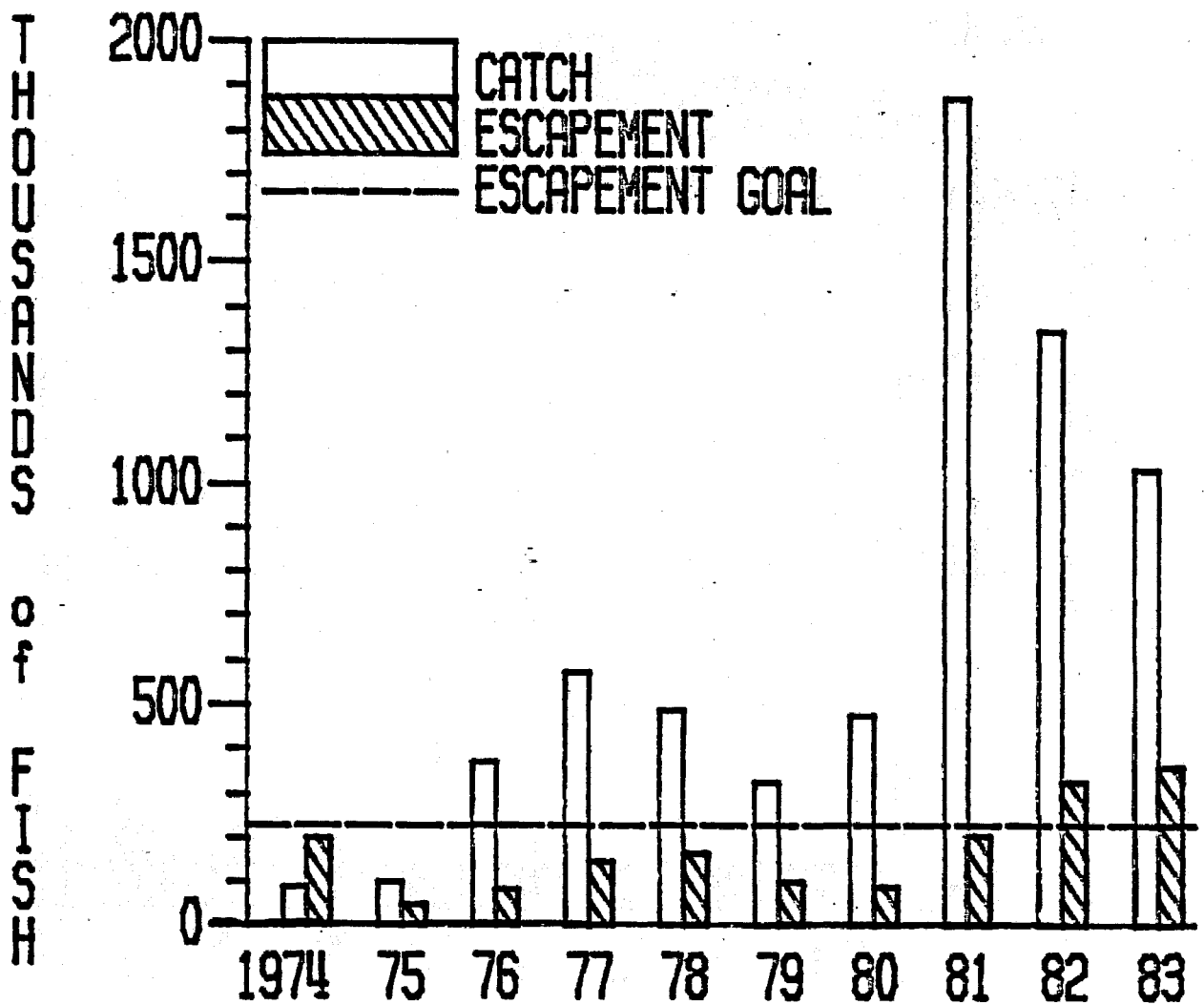


Figure 13. Chum salmon catch and escapement, Prince William Sound
1974 - 1983.

SOCKEYE SALMON CATCH and ESCAPEMENT COGHILL DISTRICT

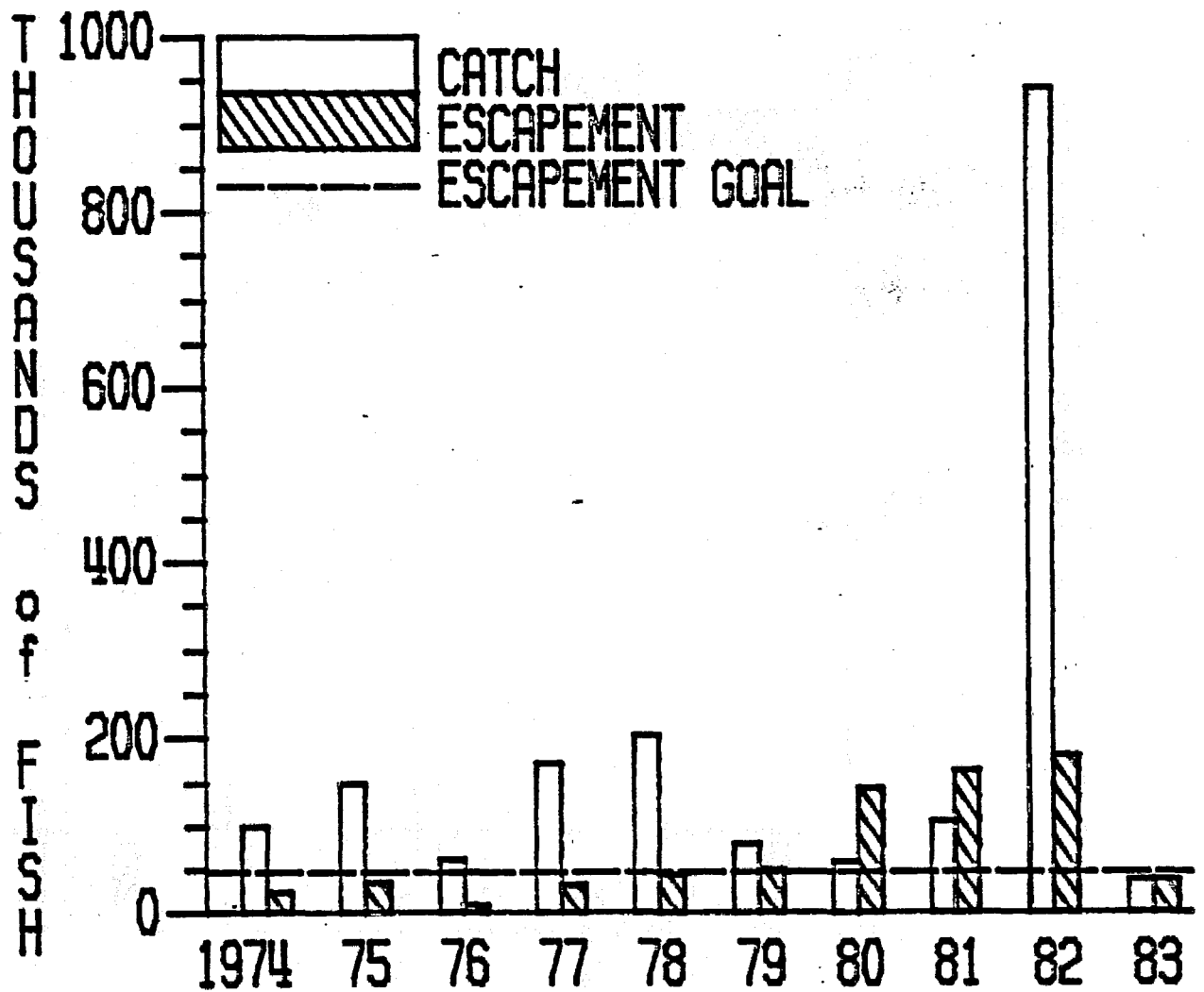


Figure 14. Sockeye salmon catch and escapement, Coghill district, 1974 - 1983.

SOCKEYE SALMON CATCH and ESCAPEMENT ESHAMY DISTRICT

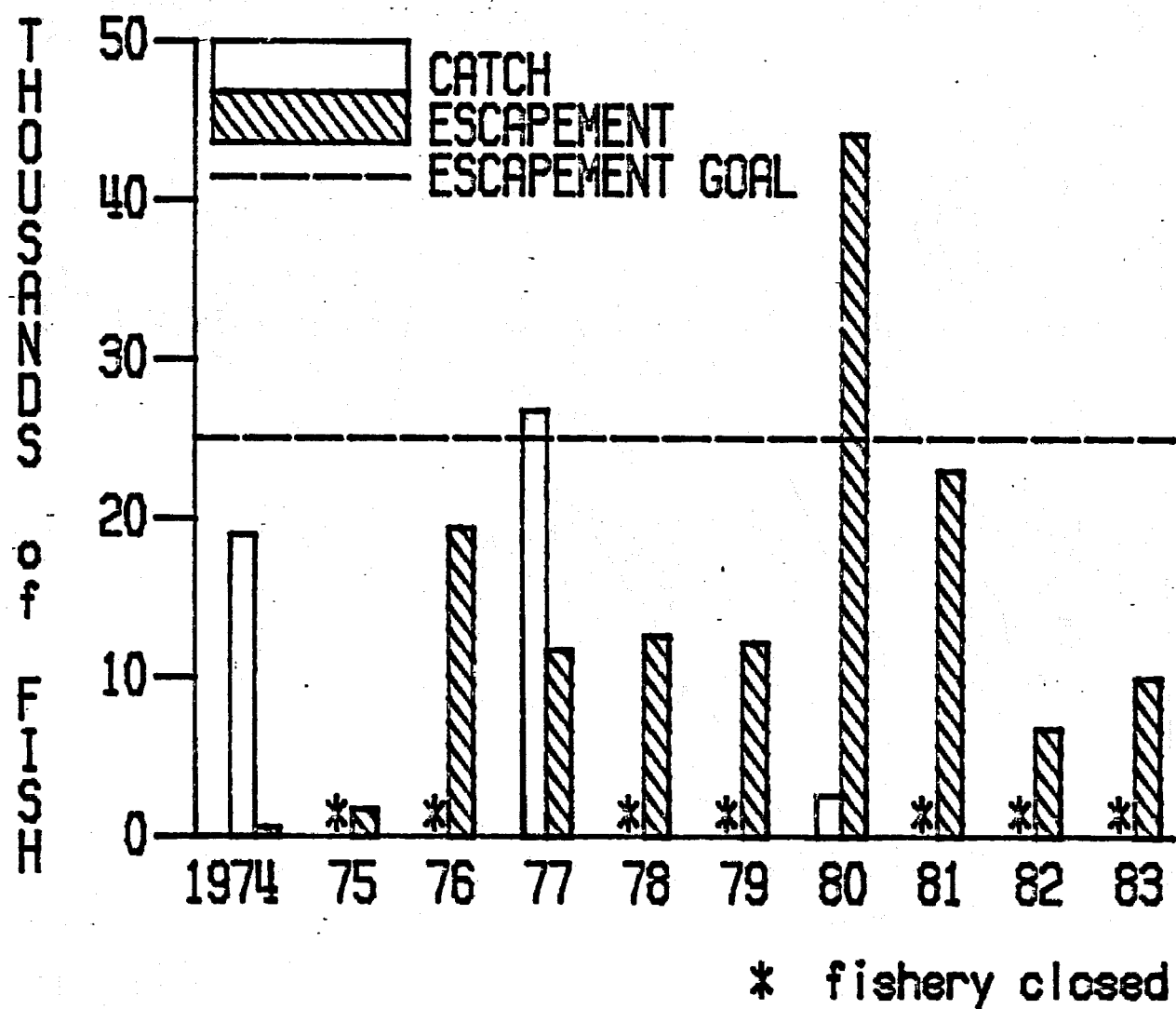


Figure 15. Sockeye salmon catch and escapement, Eshamy district, 1974 - 1983.

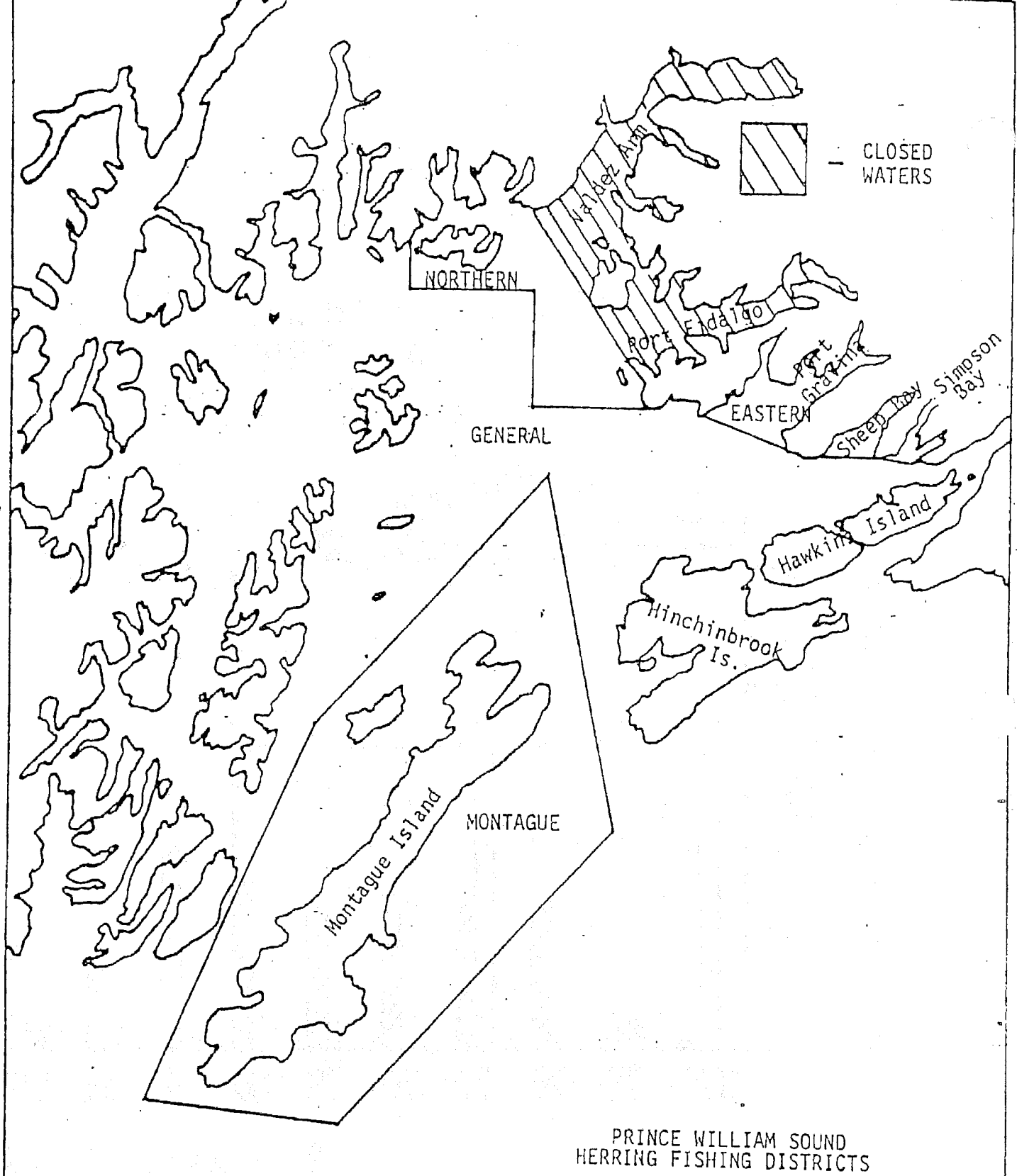


Figure 16. Prince William Sound herring fishing districts and general area open to production of herring spawn-on-kelp.

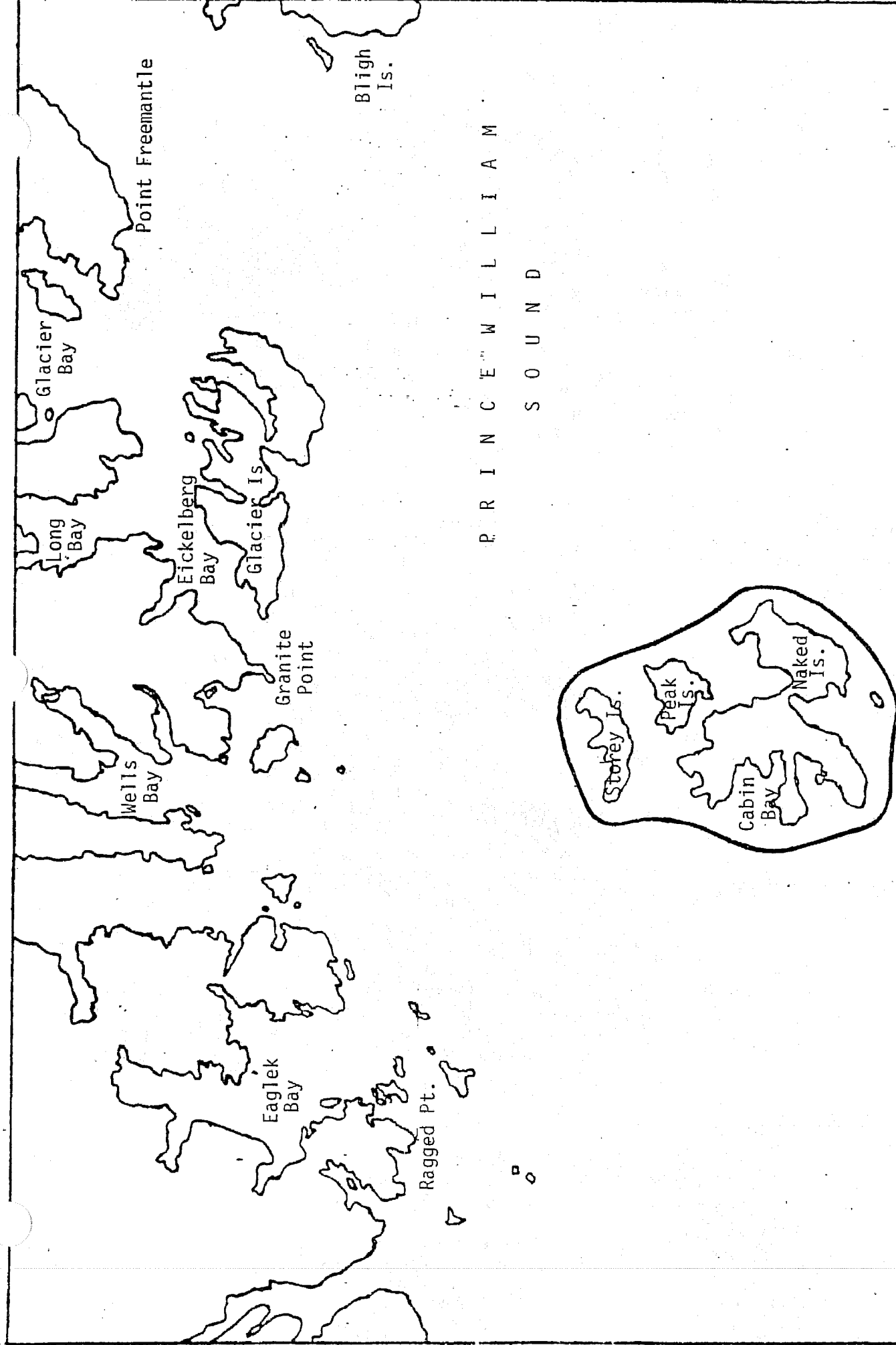


Figure 17. Special areas open to herring spawn on kelp fishery during the twelve hour period, April 27, 1983, Prince William Sound.

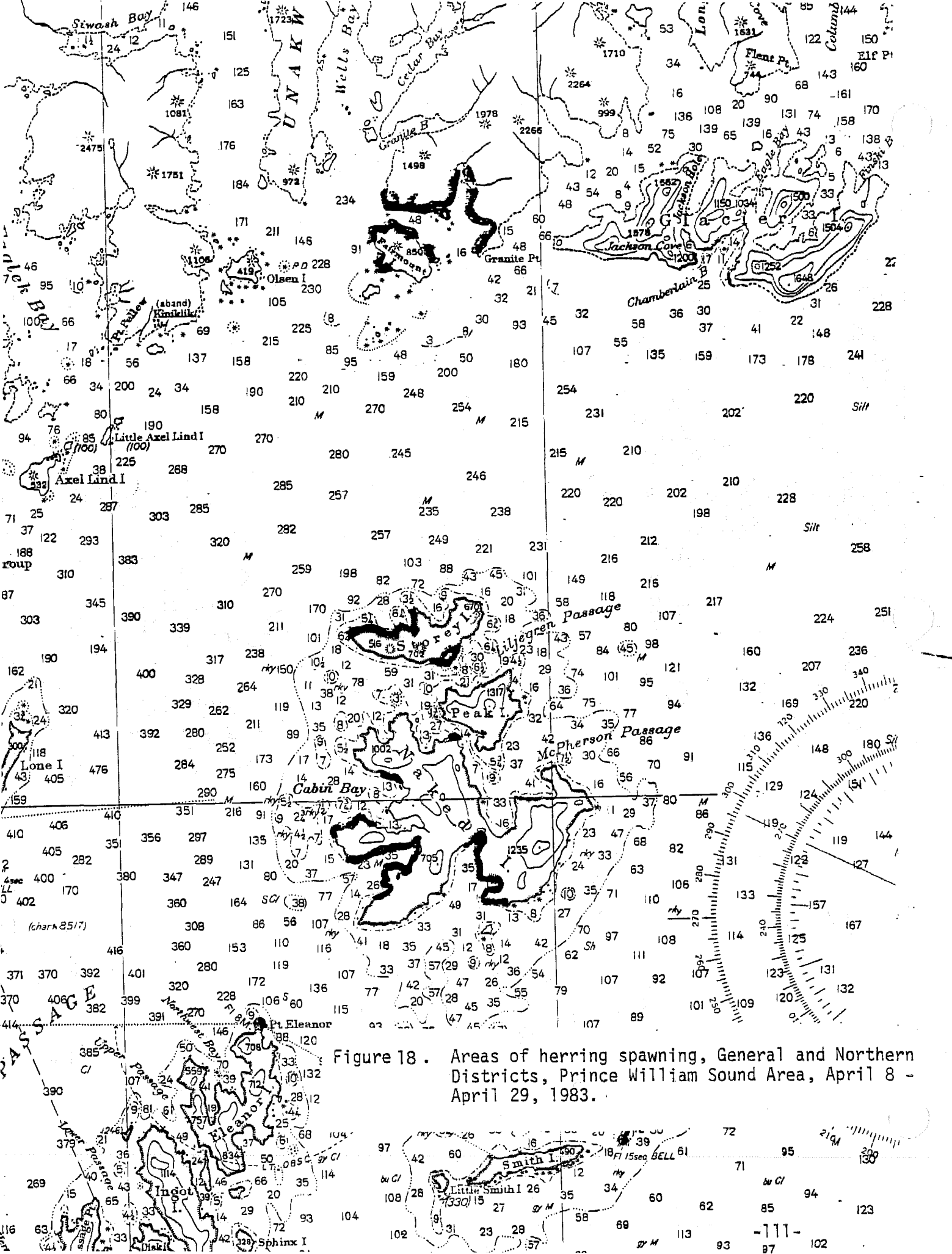
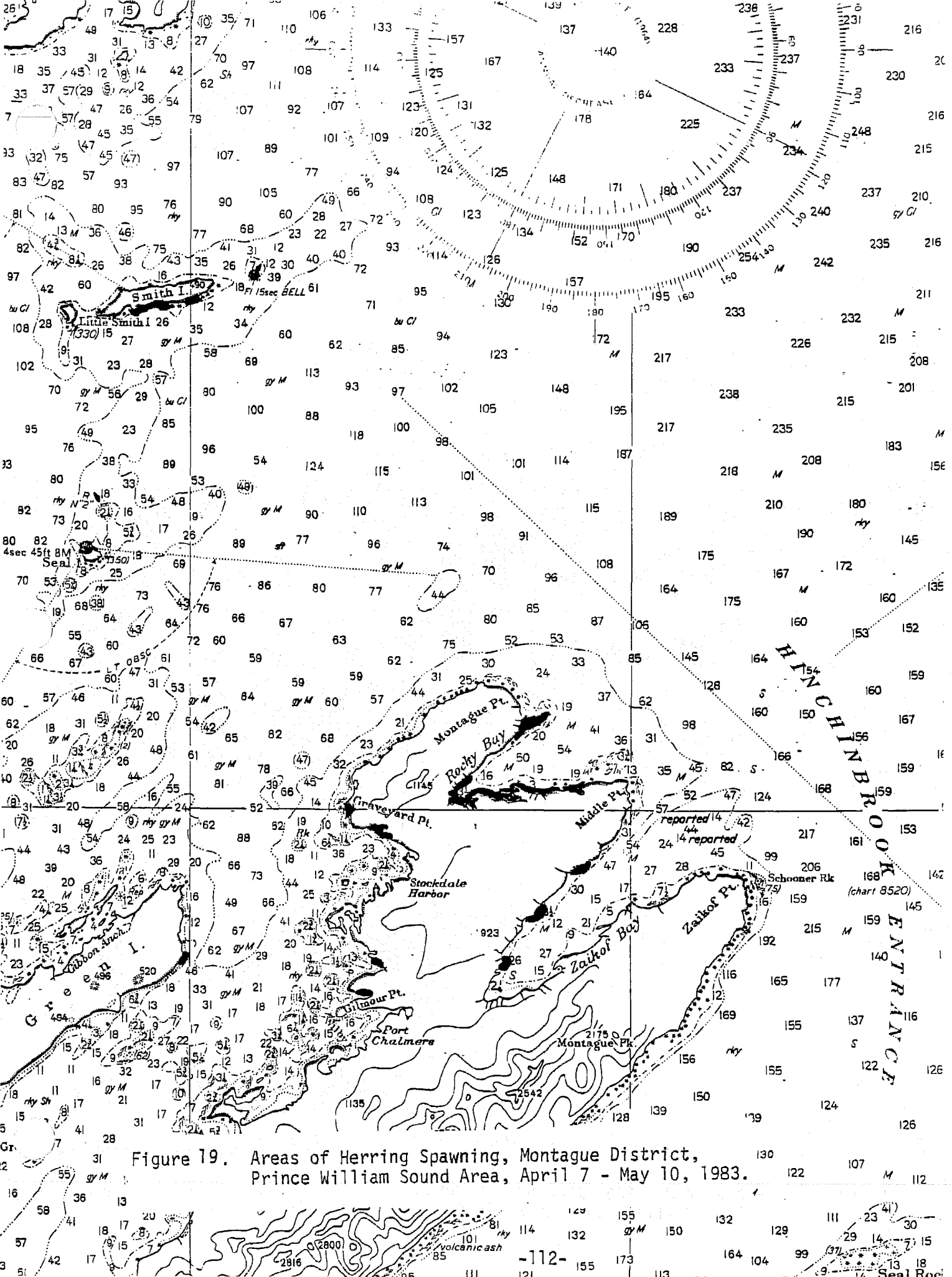
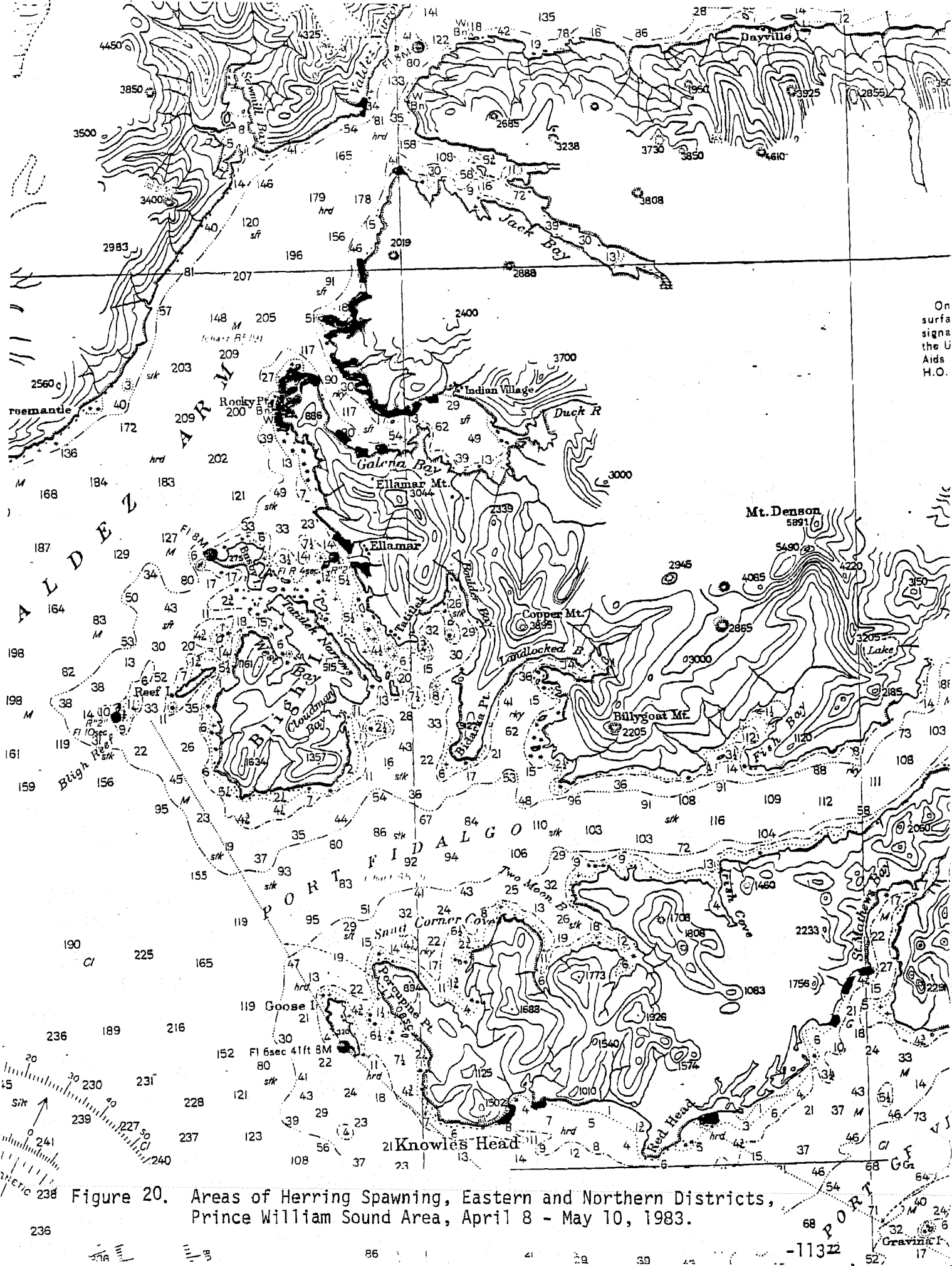


Figure 18. Areas of herring spawning, General and Northern Districts, Prince William Sound Area, April 8 - April 29, 1983.





ALL FISHERIES HERRING HARVEST, PRINCE WILLIAM SOUND

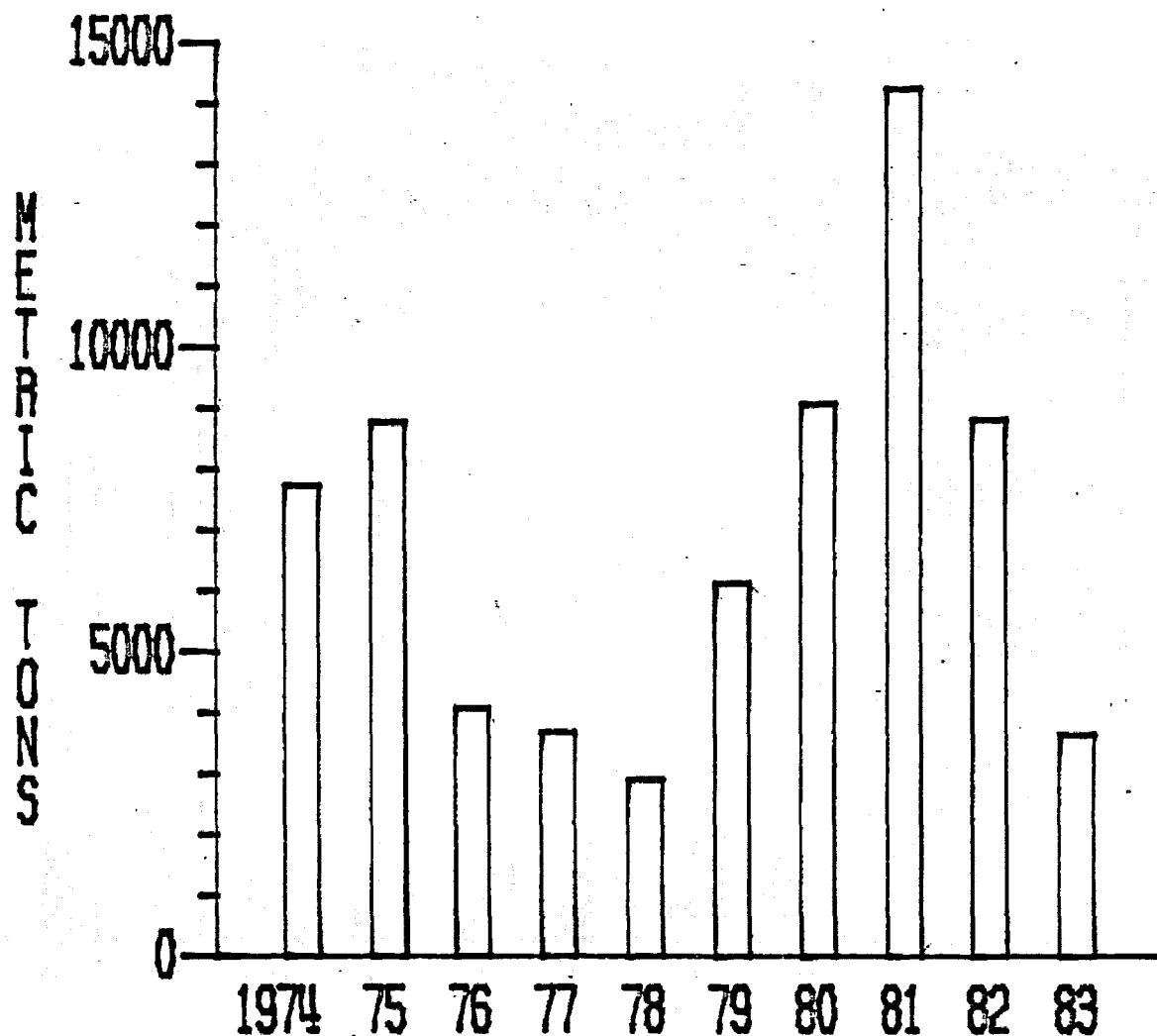


Figure 21. All fisheries herring harvest, Prince William Sound, 1974-1983.

HERRING SAC ROE HARVEST and PEAK AERIAL ESTIMATE PRINCE WILLIAM SOUND

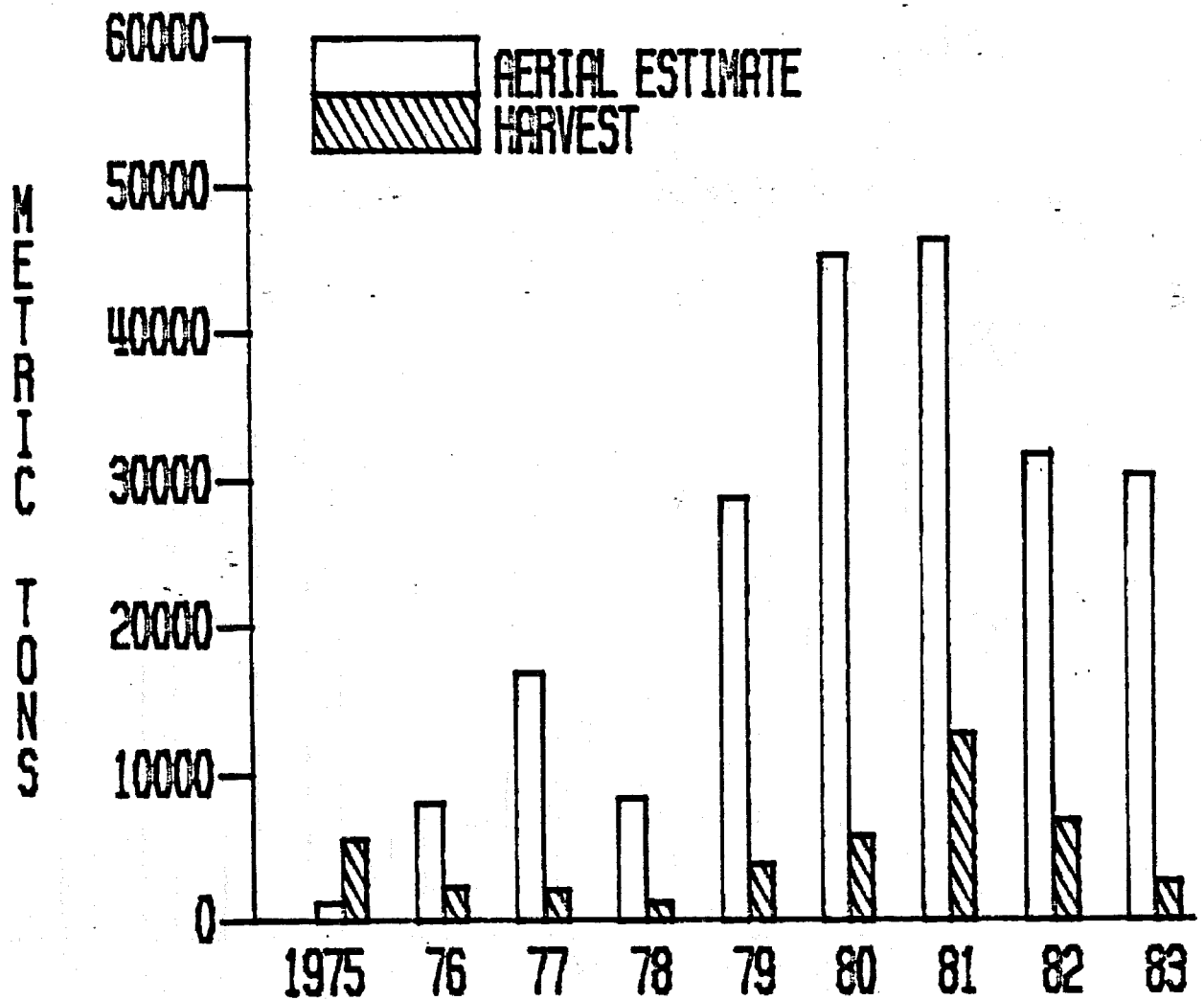


Figure 22. Herring sac roe harvest and peak estimate, Prince William Sound, 1975 - 1983.

HERRING SAC ROE HARVEST and PEAK AERIAL ESTIMATE EASTERN DISTRICT

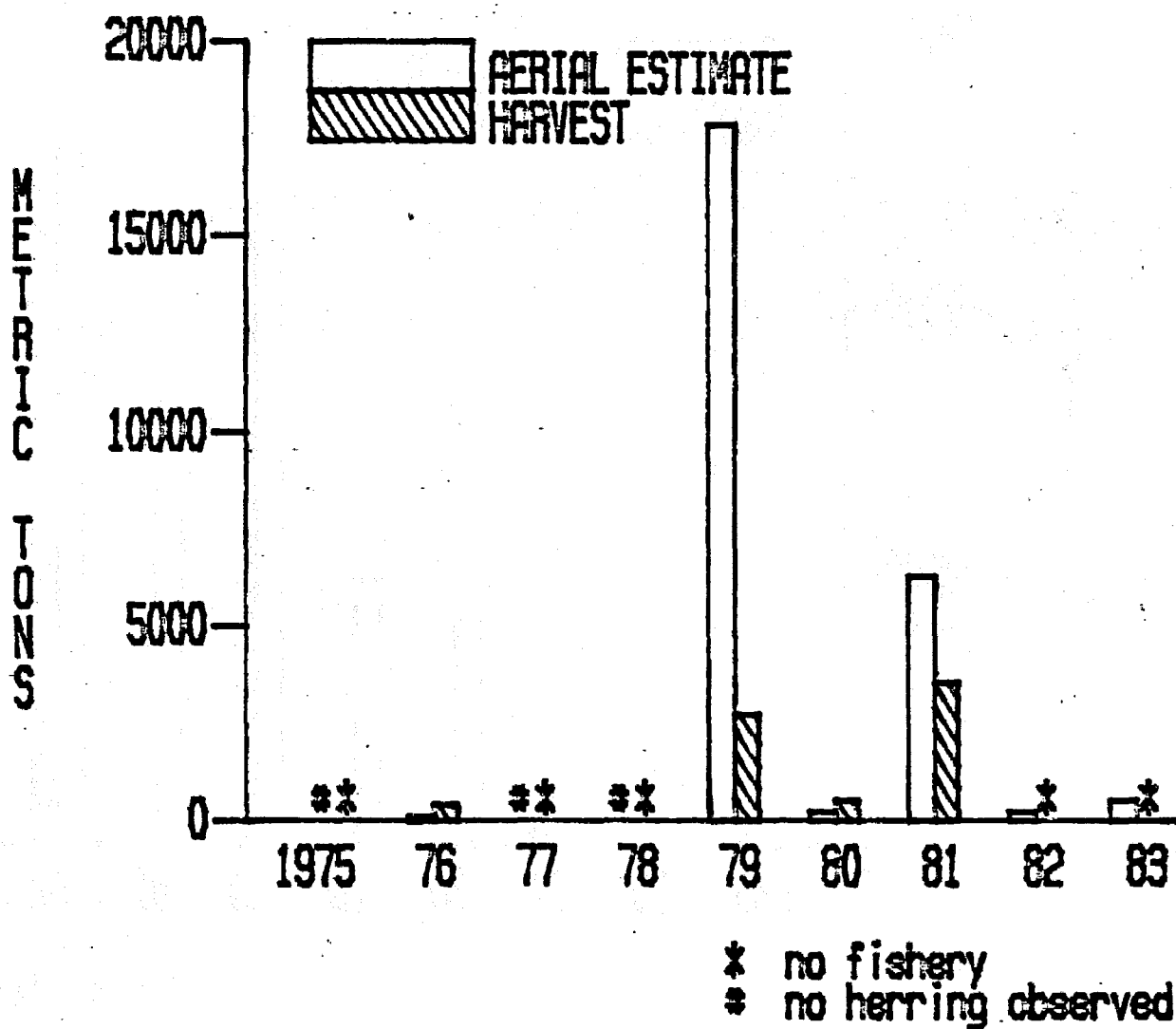


Figure 23. Herring sac roe harvest and peak estimate, Eastern District, Prince William Sound, 1975 - 1983.

HERRING SAC ROE HARVEST and PEAK AERIAL ESTIMATE NORTHERN DISTRICT

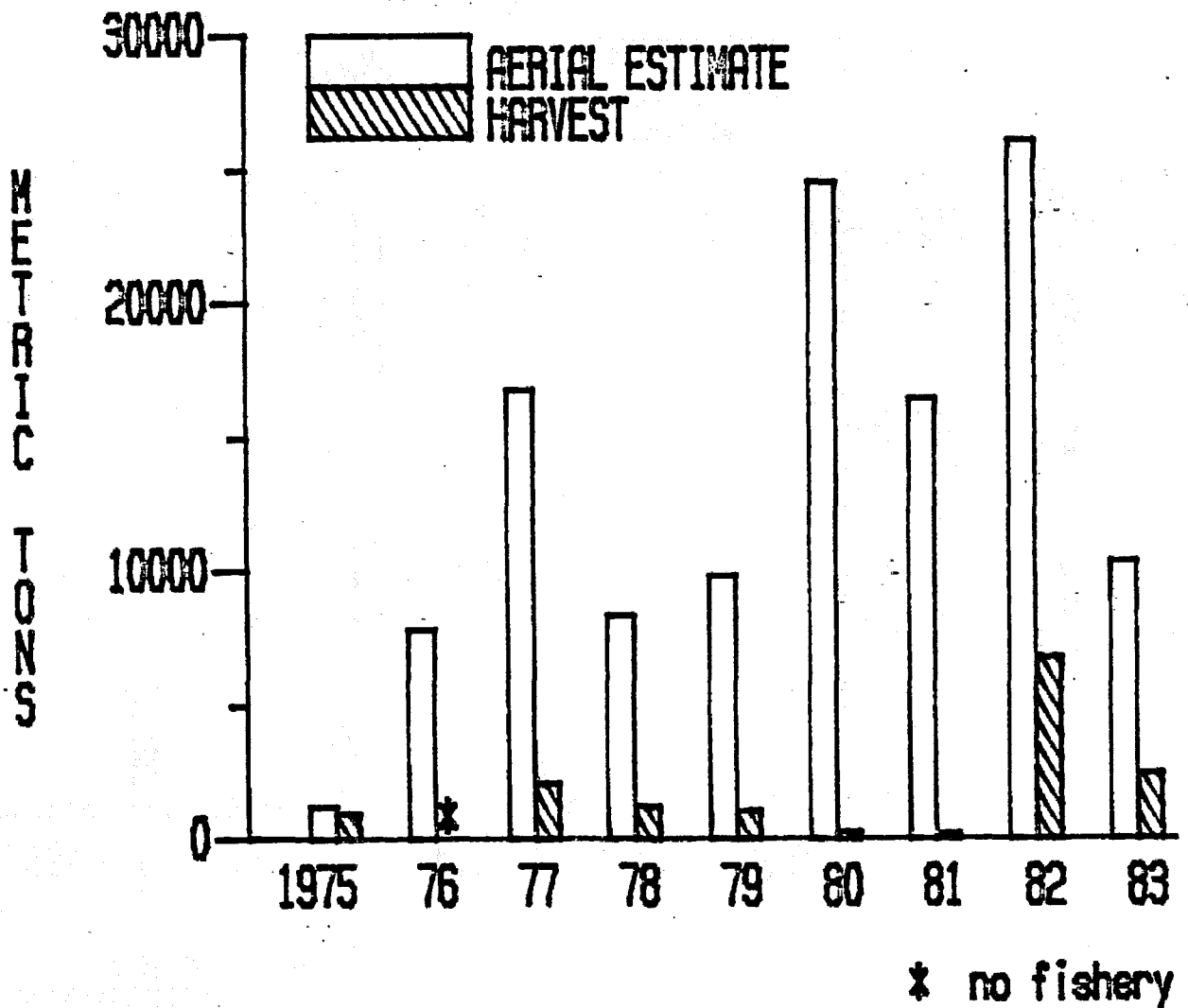


Figure 24. Herring sac roe harvest and peak estimate, Northern District, Prince William Sound, 1975 - 1983.

HERRING SAC ROE HARVEST and PEAK AERIAL ESTIMATE MONTAGUE DISTRICT

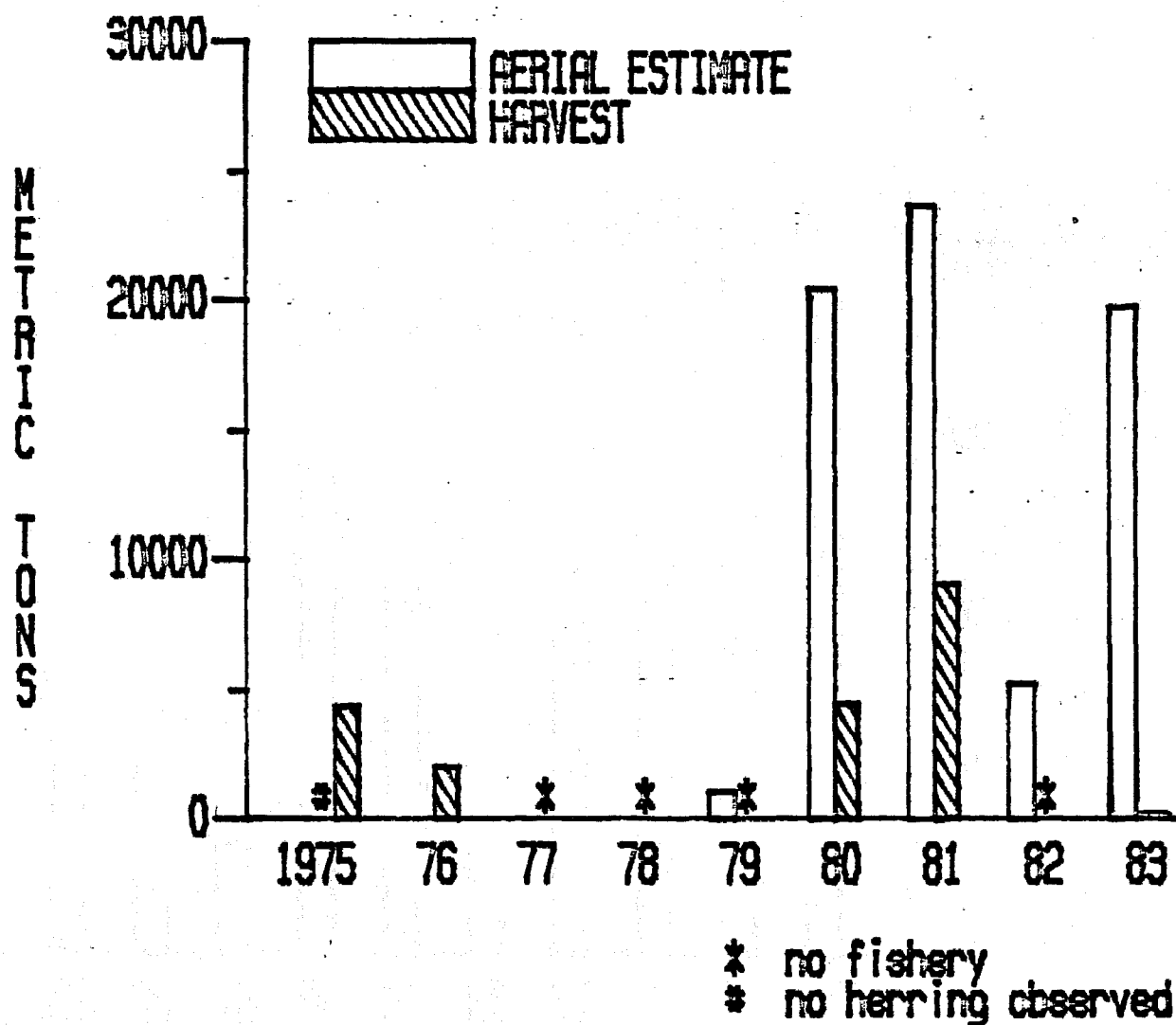


Figure 25. Herring sac roe harvest and peak estimate, Montague District, Prince William Sound, 1975 - 1983.

HERRING SPAWN on KELP HARVEST, PRINCE WILLIAM SOUND

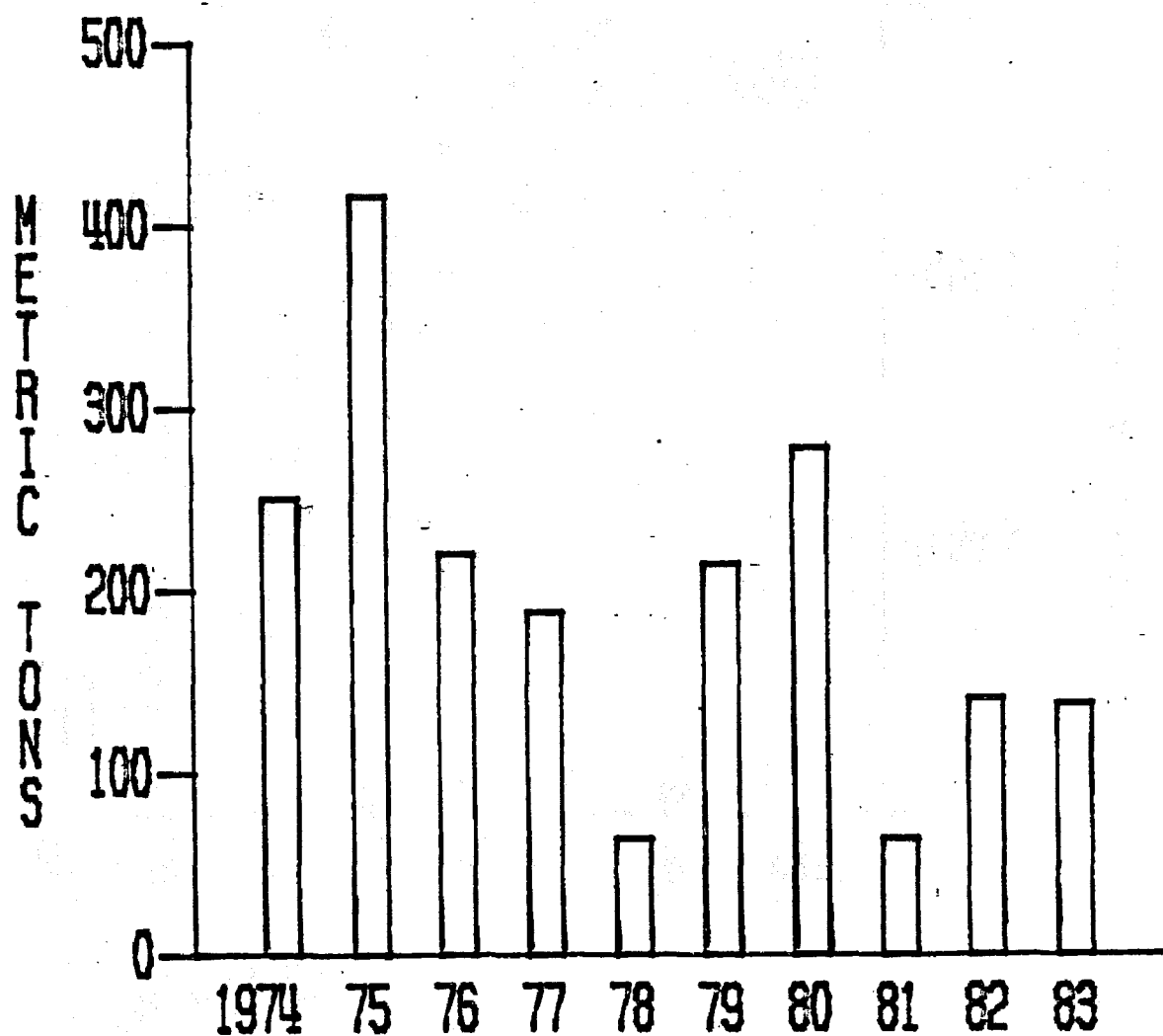


Figure 26 Herring spawn on kelp harvest, Prince William Sound, 1974 - 1983.

BAIT HERRING HARVEST, PRINCE WILLIAM SOUND

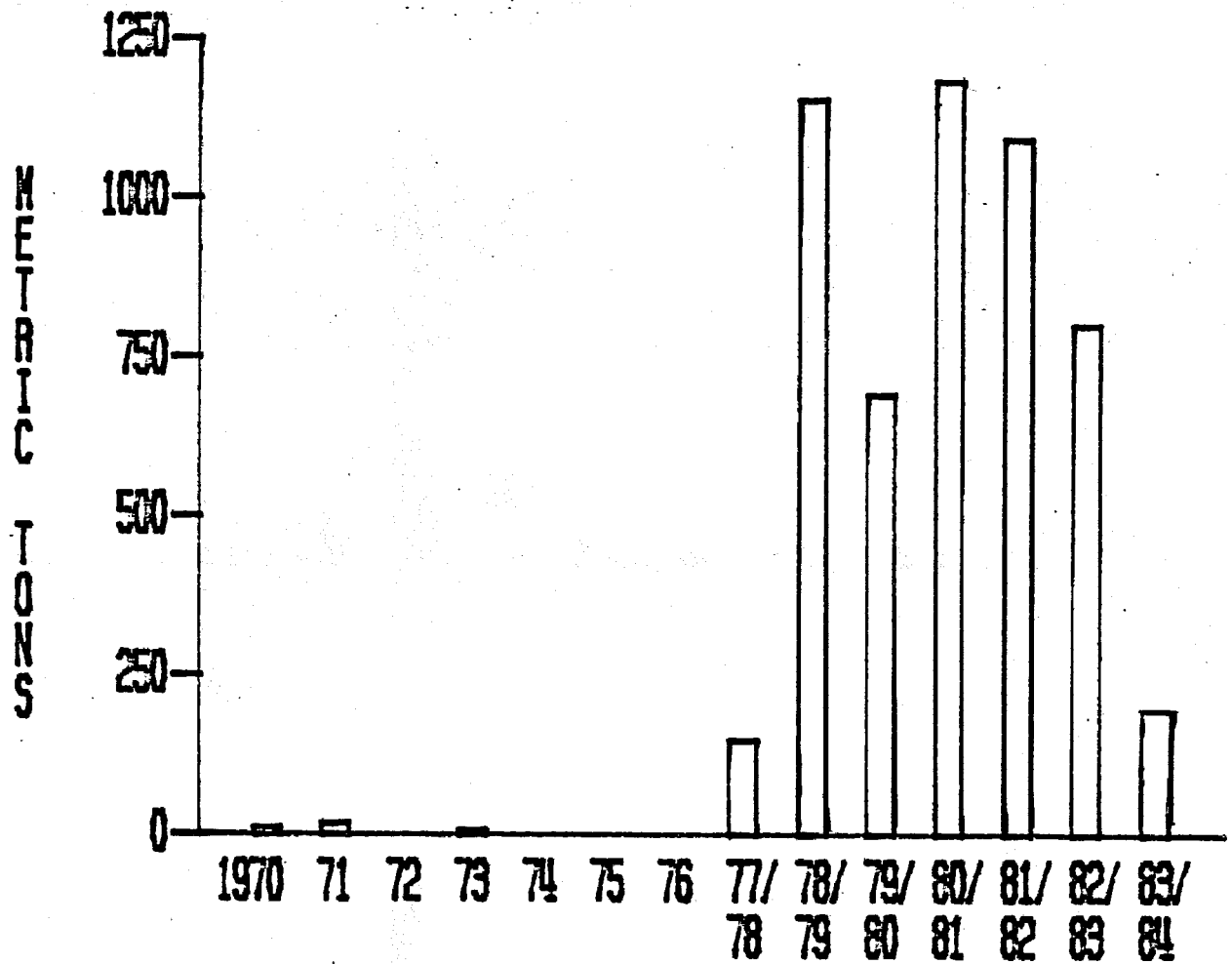


Figure 27. Bait/food herring harvest, Prince William Sound, 1970 - 1983.

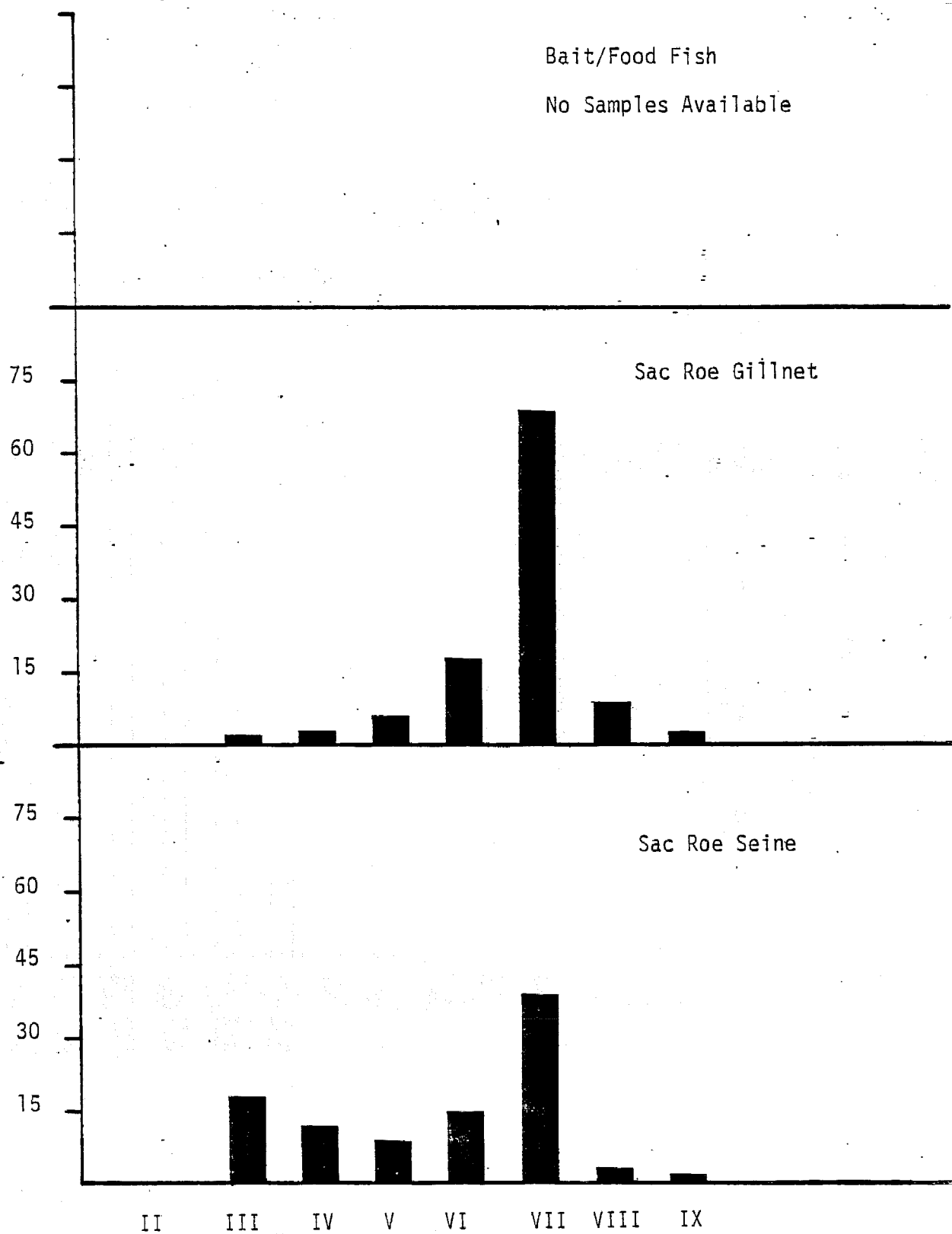


Figure 28. Prince William Sound Sac Roe, Bait/food fish, fisheries percent contribution by age class, 1983.

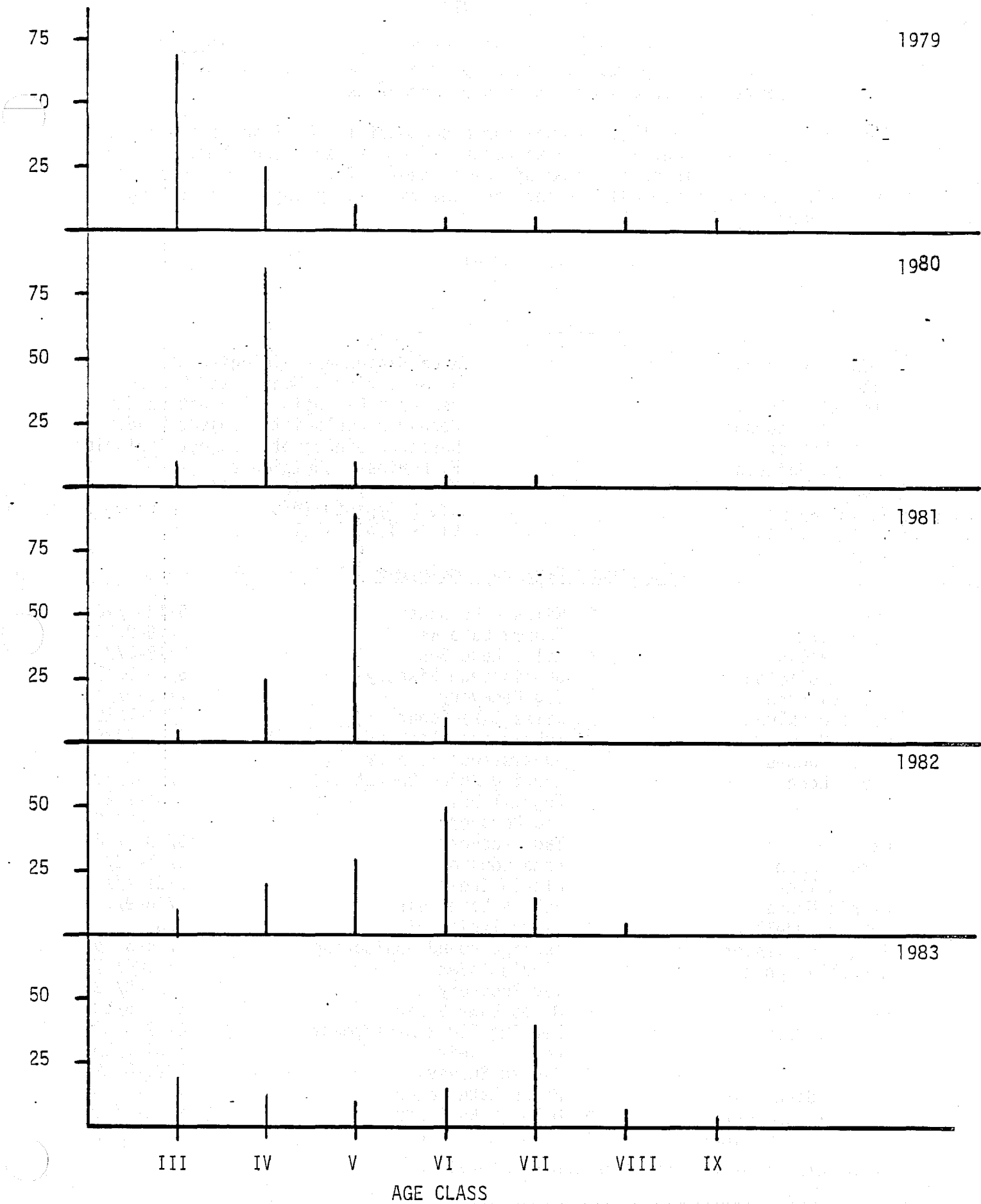


Figure 29. Prince William Sound herring sac roe seine fishery. Percent contribution by age class 1979-1983.

ACKNOWLEDGEMENTS

The finfish operations for the Commercial Fisheries Division, Prince William Sound Area, employed 9 permanent and 21 permanent seasonal employees in 1983 who participated in various area management programs.

Thanks is extended to all personnel for a successful 1983 fisheries season. Special acknowledgement is given to Peter J. Fridgen and Michael McCurdy for their contribution in preparation of the contents of this report. Also to Marnee Murray for editorial comments and the task of typing and collating this report.

Following is a list of personnel, general duty assignments and periods of employment.

Permanent Employees

| | |
|--------------------|---------------------------------------|
| Richard C. Randall | Area Management Biologist |
| Peter J. Fridgen | Assistant Area Management Biologist |
| Michael McCurdy | Research Biologist, Project Leader |
| Kenneth Roberson | Research Biologist, Project Leader |
| Peggy Merritt | Research Biologist, Project Biologist |
| John M. Jackson | Fisheries Technician V |
| Robert Gaylor | Fisheries Technician III |
| Marnee Murray | Clerk Typist III |
| Audrey Denison | Clerk Typist III |

Permanent Seasonal Employees

| | | |
|--------------------|--------------------------|-----------|
| Frank Bird | * Miles Lake Sonar | 5/12-7/18 |
| John Burns | Eshamy Lake Weir | 6/15-8/25 |
| Nate Callis | * Miles Lake Sonar | 7/18-7/27 |
| Alfred Clayton | * Subsistence Fishery | 6/ 3-8/17 |
| Dave Dickson | Tag Recovery | 7/23-9/ 1 |
| Janelle Eklund | * Miles Lake Sonar | 5/24-7/18 |
| Bruce Gordon | * Subsistence Fishery | 6/ 1-8/15 |
| Randy Hughes | * Subsistence Fishery | 6/ 1-8/23 |
| Wayne Lonn | Herring Pound Operating | 4/ 4-5/30 |
| | Coghill Weir | 5/31-7/22 |
| | Tag Recovery | 7/23-8/30 |
| Larry Madison | Tag Recovery | 6/28-8/ 8 |
| Carol Maxwell | Data Control | 3/ 1-12/ |
| Jack Miller | Alevin Index | 3/21-4/12 |
| Dennis Moore | Eshamy Lake Weir | 6/15-9/ 6 |
| Rebecca Odell | * Clerk Typist II | P/S |
| Rene' Pellissier | Herring Pound Monitoring | 4/ 4-5/ 9 |
| Robert Ritchie | Alevin Index | 3/18-4/ 7 |
| | Tag Recovery | 6/27-8/ 8 |
| Dale Russell | * Miles Lake Sonar | 5/12-5/23 |
| Randall Rust | Herring Stock Assessment | 4/ 7-5/30 |
| | Coghill Weir | 5/31-7/25 |
| | Ground Surveys | 7/26-8/29 |
| Robert Sanderlin | * Miles Lake Sonar | 7/18-8/ 5 |
| Russell Scribner | * Miles Lake Sonar | 5/23-8/ 5 |
| Charles Trowbridge | * Miles Lake Sonar | 5/13-6/17 |

*Projects under Kenneth Roberson's supervision

Appendix
Table A.

A sequential listing of finfish processors, location of operation size of cans, lines of machinery and type of product processed in 1983.

| Names, Executive, Address Location of Operations | Size of Cans Lines of Machinery | Type of Product |
|--|--------------------------------------|---------------------------|
| A. Kemp Fisheries Box 6506 Duluth, MN 55806 | | Salmon Herring Sac Roe |
| Alaska Fish Producers 1310 Morris Crescent Delta Canada BC V4L 2E2 | | Salmon |
| Alaska Fresh Catch 1902 Sunrise Dr. Anchorage, AK 99504 | | Salmon |
| Alaska Rim Seafoods 2200 Belmont Dr. Anchorage, AK 99503 | | Salmon |
| Alaska Seafare Box 10-614 Anchorage, AK 99511 | | Salmon |
| All Alaskan Seafoods, Inc. 2009 Minor Avenue North Seattle, WA 98102 | | Herring Sac Roe |
| Blakes Canning Box 94 Cordova, AK 99574 | | Salmon |
| Chugach Alaska Fisheries Box 120 Cordova, AK 99574 | (2) 1-lb. Tall 1/2 lb. 1/4 lb. | Salmon Herring Sac Roe |
| Cold Water Harvesters 507 Third Ave. #908 Seattle, WA 98104 | | Herring Eggs on Kelp |
| Comeau International Lady Pacific, Inc. Suite 209 180 Nickerson St. Seattle, WA 98109 | | Herring Sac Roe |

(Continued)

Appendix Table A ,(continued.)

| Names, Executive, Address Location of Operations | Size of Cans Lines of Machinery | Type of Product |
|--|--|---------------------------|
| Copper River Fisherman's Coop Box 90 Cordova, AK 99574 | | Salmon Herring Sac Roe |
| Copper River Products Box 835 Cordova, AK 99574 | | Salmon |
| Daerim America, Inc. P.O. Box 769 Kodiak, AK 99615 | | Herring Sac Roe |
| Eyak Packing Box 1131 Cordova, AK 99574 | | Salmon |
| Frontier Fish SR Box 3150-6 Anchorage, AK 99502 | | Salmon |
| Glacier Packing Box 294 Cordova, AK 99574 | 6 1/2 oz. hand pack 7 1/2 oz. hand pack | Salmon |
| Hale, Thomas Box 654 Whittier, AK 99693 | | Salmon |
| Hightide Seafoods Box 156 Valdez, AK 99686 | | Salmon |
| Kanematsu Fisheries, Inc. Box 684 Whittier, AK 99693 | | Salmon |
| Kodiak Alaskan Seafoods Box 375 Kodiak, AK 99615 | | Salmon |
| Kodiak King Crab, Inc. P.O. Box 1457 Kodiak, AK 99615 | | Herring Sac Roe |
| Mohr Processing Box 483 Cordova, AK 99574 | | Salmon |

(Continued)

Appendix Table A ,(continued.)

| Names, Executive, Address Location of Operations | Size of Cans Lines of Machinery | Type of Product |
|---|--------------------------------------|---|
| Morpac, Inc. Box 638 Cordova, AK 99574 | 1-lb. Tall 1/2 lb. | Salmon Herring Sac Roe |
| MSP Corporation Box 1249 Cordova, AK 99574 | | Herring Eggs On Kelp |
| Newby, Richard A. 2510 Aspen Drive Anchorage, AK 99503 | | Herring Eggs On Kelp |
| New West Fisheries Inc. 4453 Sucia Drive Ferndale, WA 982348 | | Herring Sac Roe |
| North Coast Seafood Processors P.O. Box 17538 Seattle, WA 98107 | | Herring Sac Roe Herring Eggs On Kelp |
| North Pacific Processors Box 1040 Cordova, AK 99574 | 1-lb. Tall 1/2 lb. 1/4 lb. | Salmon Herring Eggs on Kelp |
| Northland 3600 15th Ave. W. Seattle, WA 98110 | | Salmon |
| Ocean Enterprises P.O. Box 8192 Ketchikan, AK 99901 | | Herring Eggs On Kelp |
| Polar Ice Seafoods P.O. Box 3092 Seattle, WA 98114 | | Salmon |
| Royal Pacific Fisheries Box 4100 Kenai, AK 99611 | | Herring Sac Roe |
| Sea Alaska Box 380 Cordova, AK 99574 | | Salmon Herring Sac Roe |
| Seahawk Seafoods, Inc. Box 151 Valdez, AK 99686 | | Salmon |
| Seward Fisheries Box 8 Seward, AK 99664 | 1-lb. Tall 1/2 lb. (Continued) | Salmon Herring Sac Roe Herring Bait |

Appendix Table A,(continued.)

| Names, Executive, Address Location of Operations | Size of Cans Lines of Machinery | Type of Product |
|--|------------------------------------|---|
| Seward Marine Services Box 335 Seward, AK 99664 | | Salmon Herring Sac Roe |
| St. Elias Ocean Products Box 548 Cordova, AK 99574 | 1-lb. Tall 1/2 lb. 4-lb. | Salmon Herring Sac Roe |
| Taylor Aquatics Box 131 Cordova, AK 99574 | | Herring Sac Roe Herring Eggs On Kelp |
| Teddy Co. Box 2733 Kodiak, AK 99615 | | Salmon |
| Trident Seafoods 5355 28th Ave. N.W. Seattle, WA 98107 | | Herring Sac Roe |
| Virgin Bay Kelp Co. Box 277 Cordova, AK 99574 | | Salmon Herring Eggs On Kelp |
| Waterkist Box 690 Valdez, AK 99686 | | Salmon Herring Sac Roe |
| Whitney Fidalgo Box 670 Cordova, AK 99574 | | Salmon Herring Sac Roe |

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement¹, 1983.

| Locations | Survey Conditions ² | Date ³ | Method ⁴ | Sockeye | Chinook | Coho |
|----------------------------|-----------------------------------|-------------------|---------------------|---------|---------|---------|
| <u>Eyak River</u> | | | | | | |
| Eyak Lake | | 7/28 | A | 8,900 | | 14,600 |
| Hatchery Creek | | 7/14 | A & G | 2,000 | | 1,000 |
| Power Creek | | 9/16 | A | 200 | | 1,000 |
| Ibek Creek | | 9/16 | A | 0 | | 4,200 |
| <u>Alaganik Slough</u> | | | | | | |
| McKinley Lake | | 8/4 | A | 12,000 | | 5,000 |
| Salmon Creek | | 8/4 | A | 8,500 | | 6,500 |
| 19 Mile Creek | | 9/16 | A | 0 | | 125 |
| <u>26 - 27 Mile Creek</u> | | 7/14 | A | 8,000 | | 0 |
| <u>39 Mile Creek</u> | | 7/28 | A | 13,000 | | 6,500 |
| <u>Goat Mountain</u> | | 7/14 | A | 100 | | NC Silt |
| <u>Pleasant Creek</u> | | 9/24 | A | 0 | | 350 |
| <u>Martin River</u> | | | | | | |
| Ragged Point Lake | | 8/4 | A | 3,650 | | 3,100 |
| Ragged Point Outlet | | 9/16 | A | 8,500 | | 200 |
| Martin Lake | | 9/6 | A | 1,500 | | 125 |
| Martin Feeders | | 7/7 | A | 9,000 | | 6,100 |
| Pothole Lake | | 7/14 | A | 8,500 | | 150 |
| Pothole Lake Outlet | | 9/16 | A | 5,500 | | 0 |
| Little Martin Lake | | 7/28 | A | 1,000 | | 600 |
| Tokun Lake | | 8/18 | A | 6,000 | | 1,125 |
| Tokun Lake Outlet | | 8/18 | A | 7,645 | | 125 |
| Tokun Springs | | 9/6 | A | 100 | | 100 |
| Ragged Point River | | 9/16 | A | 0 | | 500 |
| | | 9/16 | A | 0 | | 200 |
| <u>Martin River Slough</u> | | 7/7 | A | 11,000 | | 9,700 |
| <u>Bering River</u> | | | | | | |
| Bering Lake | | 7/14 | A | 26,500 | | 4,000 |
| Dick Creek | | 7/14 | A | 4,000 | | 7,100 |
| Shepherd Creek | | 6/29 | A | 9,500 | | 0 |
| Carbon Creek | | 8/18 | A | NC | | 0 |
| Kushtaka Lake | | 8/18 | A | 1,200 | | 0 |
| Shokum Creek | | 8/18 | A | 1,000 | | 0 |
| Trout Creek | | 8/4 | A | NC | | 0 |
| Clear Creek | | 8/4 | A | 3,500 | | 0 |
| Gandil River | muddy | 9/6 | A | 0 | | 0 |
| Nichawak River | | 9/6 | A | 0 | | 800 |
| <u>Katalla River</u> | | 9/16 | A | 0 | | 4,800 |

(Continued)

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement^{1/}, 1983 (cont.).

| Location | Survey- Conditions ^{2/} | Date ^{3/} | Method ^{4/} | Sockeye | Chinook | Coho |
|--------------------------|-------------------------------------|--------------------|----------------------|---------|---------|------|
| Bremner River | | | | | | |
| Peninsula Lake | | 8/29 | A | 5,700 | | |
| Salmon Creek | | 8/3 | A | 1,550 | | |
| Steam Boat Lake | | 8/29 | A | 450 | | |
| Price Cr. | | 8/3 | A | 50 | | |
| Unnamed Creek #1 | | 8/3 | A | 12 | | |
| Unnamed Creek #2 | | 8/3 | A | 8 | | |
| Tasnuna River | | 8/3 | A | 56 | | |
| Tiekel River | | 8/29 | A | 40 | | |
| Swan Lake | | 8/3 | A | 800 | | |
| Unnamed Tributary | | 8/3 | A | 10 | | |
| Tonsina River | | | | | | |
| Lower Tonsina Creek | * | 8/29-9/27 | A | 3,500 | | 350 |
| Little Tonsina River | | 7/25 | A | | 330 | |
| Tonsina Lake | * | 11/9 | A | 2,850 | | |
| Bernard Creek | | 7/25 | A | | 46 | |
| Grayling Creek | | 7/25 | A | 287 | | |
| Dust Creek | | 7/25 | A | | 64 | |
| Unnamed Creek | | 7/25 | A | | 2 | |
| Klutina River | * | | | | | |
| Manker Creek | | 7/25 | A | | 141 | |
| Mahlo Creek | | 7/21-7/25 | A | 2,400 | 6 | |
| Unnamed Lake | | 8/29 | A | 5,400 | | |
| 1884 Lake | | 9/27 | A | 18 | | |
| Hallet Slough | * | 8/29 | A | 800 | | |
| Curtis Creek | | 7/25 | A | 0 | | |
| St. Anne Creek | | 7/25 | A | 9,700 | 87 | |
| Tazlina River | | | | | | |
| Upper Mendeltna Creek | | 6/17 | A | 170 | 0 | |
| Mendeltna Creek | | 8/29-7/1 | A | 2,850 | 12 | |
| Kiana Creek | | 7/25 | A | 210 | 166 | |
| Tazlina Lake | | 7/21 | A | 61 | | |
| Gulkana River | | | | | | |
| Mouth to West Fork | | 7/8 | A | | 18 | |
| West Fork | | 7/20 | A | 75 | 21 | |
| Moose Creek | | 7/20 | A | | 8 | |
| Keg Creek | | 7/20 | A | 620 | | |
| Victor Creek | | 7/22 | A | 365 | | |
| West Fork to Middle Fork | | 7/22-7/8 | A | 600 | 568 | |
| Middle Fork | | 7/22 | A | 500 | 195 | |
| Dickey Lake | | 8/11 | A | 135 | | |
| Swede Lake | | 8/11 | A | 550 | | |
| Hungry Hollow Creek | | 8/19-7/20 | A | 2 | 66 | |

(Continued)

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement^{1/}, 1983 (cont.).

| Location | Survey Conditions ^{2/} | Date ^{3/} | Method ^{4/} | Sockeye | Chinook | Coho |
|--------------------------|------------------------------------|--------------------|----------------------|---------|---------|------|
| East Fork | | | | | | |
| East Fork to Paxson Lake | | 8/19-8/11 | A | 3,300 | 55 | |
| Paxson Lake | | 7/20-9/26 | A | 0 | | |
| Paxson Lake Inlet | | 8/11 | A | 3,100 | | |
| Inlet to Mud Creek | | 8/11 | A | 7,500 | | |
| Mud Creek and Lake | | 8/19 | A | 470 | | |
| Mud Creek to Summit Lake | | 8/11 | A | 5,700 | | |
| Fish Lake | | 8/19 | A | 5,500 | | |
| Summit Lake | | 8/11 | A | 18 | | |
| Gunn Creek | | 8/11 | A | 80 | | |
| Gakona River | | | | | | |
| Spring Creek | | 7/22 | A | | 117 | |
| Alder Creek | | 7/20 | A | 15 | | |
| Chistochina River | | | | | | |
| East Fork | | 7/20 | A | | 575 | |
| Eagle Creek | | 7/22 | A | 110 | 43 | |
| Mankomen Lake | | 7/22 | A | 0 | | |
| Slana River | * | | | | | |
| Mentasta Lake | | 7/20 | A | 6,800 | | |
| Fish Creek | | 7/20 | A | 900 | | |
| Bad Crossing #1 | | 7/22 | A | 650 | | |
| Bad Crossing #2 | | 7/22 | A | 1,350 | | |
| Granite Creek | | 7/22 | A | 50 | | |
| Bone Creek | | 7/22 | A | 2,200 | 19 | |
| Slana Sloughs | | 7/20 | A | 100 | | |
| Suslota Lake | | 8/19 | A | 5,600 | | |
| Indian River | | 7/22 | A | | 41 | |
| Ahtell Creek | | 7/22 | A | | 6 | |
| Tanada Creek | | | | | | |
| Tanada Lake | | 9/6 | A | 4,300 | | |
| Tanada Lake Outlet | | 9/6 | A | 6,600 | | |
| Copper Creek | | | | | | |
| Copper Lake | | 9/6 | A | 48 | | |
| Tebay River | | 8/29-8/3 | A | 450 | 11 | |
| Chokosna River | | 8/29 | A | 0 | | |
| Lakina River | | | | | | |
| Long Lake | | 8/29 | A | 5,600 | | |

(Continued)

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement^{1/}, 1983 (cont.).

| Location | Survey Conditions ^{2/} | Date ^{3/} | Method ^{4/} | Sockeye | Chinook | Coho |
|---------------------------|------------------------------------|--------------------|----------------------|---------|---------|------|
| Nizina River | | | | | | |
| Spruce Point Creek | | 8/29 | A | 0 | | |
| Trumpeter Lake | | 8/29 | A | 0 | | |
| Clear Creek (Chitina R.) | | 8/29 | A | 8 | | |
| Tana River | * | | | | | |
| Tana River Clear Channels | | 8/29 | A | 2,065 | | |
| Tana Lake Inlet | * | 8/3 | A | 350 | | |
| West Fork Clear Channels | | 8/29 | A | 70 | | |
| Chakina River | | | | | | |
| Monahan Creek | | 8/3 | A | 2 | | |

^{1/} Escapement refers to peak survey for area, or units, when areas overlap physical or in timing.

^{2/} * denotes glacial.

^{3/} Date refers to peak sockeye salmon escapements; it may or may not apply to peak chinook or coho salmon counts.

^{4/} A = air
W = weir
G = ground

(Continued)

Appendix Table C. Coghill River field camp climatological and stream observations, 1983.

| Date | Temperatures | | Water | | Precip. | Cloud ¹ Cover | | Water Gauge (Ft.) 0900 |
|------|--------------|--------------|-------|------|---------|-----------------------------|------|------------------------------|
| | Air Min. | (F°) Max. | 0900 | 2100 | | 0900 | 2100 | |
| 6/3 | 38 | 52 | 39 | 40 | .14 | 4 | 4 | - |
| 6/4 | 32 | - | 40 | 41 | 0 | 3 | 1 | - |
| 6/5 | 35 | 69 | 40.5 | 41.5 | 0 | 1 | 1 | 8.5 |
| 6/6 | 34 | 72 | 40.5 | 41.5 | 0 | 2 | 1 | 7.5 |
| 6/7 | 32 | 72 | 40.5 | 42 | 0 | 3 | 1 | 7.5 |
| 6/8 | 33 | 69 | 41.5 | 42 | 0 | 1 | 1 | 7.0 |
| 6/9 | 41 | 65 | 42 | 42 | 0 | 1 | 3 | 7.0 |
| 6/10 | 39 | 64 | 44 | 46 | .24 | 3 | 4 | 7.25 |
| 6/11 | 37 | 59 | 43.5 | 44 | 0 | 4 | 4 | 7.0 |
| 6/12 | 43 | 58 | 44 | 45 | .15 | 3 | 4 | 7.0 |
| 6/13 | 43 | 63 | 45 | 43.5 | .02 | 4 | 4 | 6.5 |
| 6/14 | 42 | 55 | 43.5 | 44 | .10 | 4 | 4 | 6.5 |
| 6/15 | 46 | 59 | 46 | 46 | .25 | 4 | 4 | 7.0 |
| 6/16 | 40 | 66 | 46 | 47 | .17 | 2 | 2 | 6.75 |
| 6/17 | 34 | 72 | 47 | 47 | 0 | 3 | 1 | 7.25 |
| 6/18 | 47 | 75 | 48 | 48.5 | 0 | 1 | 2 | 7.5 |
| 6/19 | 48 | 66 | 47 | 48 | .02 | 3 | 4 | 8.0 |
| 6/20 | 43 | 65 | 47.5 | 47.5 | 0 | 4 | 4 | 8.5 |
| 6/21 | 38 | 65 | 47.5 | 49 | 0 | 3 | 1 | 8.5 |
| 6/22 | 43 | 71 | 47 | 49 | 0 | 2 | 3 | 8.0 |
| 6/23 | 41 | 71 | 49 | 50 | 0 | 2 | 4 | 8.0 |
| 6/24 | 36 | 65 | 49 | 51 | 0 | 2 | 1 | 8.0 |
| 6/25 | 48 | 65 | 50 | 51 | 0 | 1 | 4 | 8.5 |
| 6/26 | 46 | 59 | 49 | 50 | .01 | 4 | 4 | 8.0 |
| 6/27 | 46 | 65 | 50 | 50 | .07 | 4 | 2 | 8.25 |
| 6/28 | 41 | 61 | 49 | 50 | .13 | 4 | 3 | 8.0 |
| 6/29 | 46 | 62 | 51 | 51 | .07 | 3 | 4 | 8.0 |
| 6/30 | 46 | 66 | 51 | 51 | .15 | 4 | 3 | 8.0 |
| 7/1 | 46 | 65 | 49 | 51 | .05 | 4 | 4 | 8.0 |
| 7/2 | 36 | 68 | 50 | 52 | .13 | 4 | 2 | 8.0 |
| 7/3 | 43 | 42 | 52 | 52 | 0 | 1 | 3 | 8.0 |
| 7/4 | 43 | 68 | 51 | 52.5 | 0 | 4 | 2 | 8.0 |
| 7/5 | 50 | 72 | 50 | 52 | .01 | 2 | 4 | 8.0 |
| 7/6 | 47 | 58 | 51 | 52 | .03 | 4 | 4 | 8.0 |
| 7/7 | 47 | 63 | 51 | 52 | 0 | 4 | 4 | 8.0 |
| 7/8 | 45 | 57 | 52 | 53 | .03 | 4 | 4 | 8.0 |
| 7/9 | 44 | 58 | 54 | 54 | .75 | 4 | 4 | 8.0 |
| 7/10 | 45 | 66 | 53 | 53 | .21 | 2 | 4 | 8.0 |
| 7/11 | 44 | 55 | 51 | 50 | .21 | 4 | 4 | 8.0 |
| 7/12 | 46 | 61 | 51 | 51 | .02 | 4 | 3 | 7.75 |
| 7/13 | 36 | 63 | 51 | 51 | 0 | 4 | 4 | 6.75 |
| 7/14 | 34 | 71 | 51 | 51 | 0 | 1 | 1 | 6.5 |
| 7/15 | 40 | 76 | 51 | 53 | 0 | 1 | 2 | 6.0 |
| 7/16 | 50 | 73 | 51.5 | 53 | 0 | 2 | 4 | 6.0 |
| 7/17 | 47 | 72 | 52 | 53 | 0 | 3 | 2 | 6.0 |
| 7/18 | 46 | 68 | 51 | 53 | .22 | 3 | 3 | 6.5 |
| 7/19 | 48 | 69 | 53 | 54 | .20 | 4 | 4 | 6.0 |
| 7/20 | - | 64 | 53 | 53 | .02 | 4 | 4 | 6.0 |
| 7/21 | - | - | - | - | - | - | - | - |

¹ Cloud Cover: 1 = Clear, 2 = Less than $\frac{1}{2}$ cloud cover, 3 = Greater than $\frac{1}{2}$ cloud cover, 4 = Complete cloud cover.

Appendix Table D. Eshamy River field camp climatological and stream observations, 1983

| Date | Temperatures | | Water (C°) | | Percip. 0900 | Cloud Cover | | Water Gauge (Ft.) 0900 |
|------|------------------|------|------------|------|-----------------|----------------|------|------------------------------|
| | Air (F°) Min. | Max. | 0900 | 2100 | | 0900 | 2100 | |
| 6/15 | | 58 | | | .16 | 4 | 4 | .41 |
| 6/16 | | 62 | 13 | | 0 | 4 | 2 | .40 |
| 6/17 | | 66 | 14 | | 0 | 2 | 1 | .40 |
| 6/18 | | 68 | 12 | | 0 | 1 | 1 | .40 |
| 6/19 | | 60 | 12 | | 0 | 3 | 3 | .40 |
| 6/20 | | 58 | 12 | | 0 | 4 | 4 | .38 |
| 6/21 | | 64 | 12 | | 0 | 4 | 2 | .36 |
| 6/22 | | 66 | 13 | | 0 | 2 | 2 | .32 |
| 6/23 | | 58 | 14 | | 0 | 2 | 3 | .30 |
| 6/24 | | 60 | 13 | | 0 | 2 | 2 | .30 |
| 6/25 | | 58 | 14 | | 0 | 2 | 4 | .28 |
| 6/26 | | 58 | 14 | | .12 | 4 | 4 | .28 |
| 6/27 | | 58 | 14 | | .42 | 4 | | .28 |
| 6/28 | | 56 | 14 | | .25 | 4 | 4 | .28 |
| 6/29 | | 54 | 14 | | .92 | 4 | 4 | .28 |
| 6/30 | | 56 | 14 | | 0 | 4 | 3 | .36 |
| 7/1 | | 56 | 14 | | 0 | 4 | 4 | .36 |
| 7/2 | | 59 | 14 | | 0 | 2 | 2 | .30 |
| 7/3 | | 58 | 14 | | 0 | 1 | 2 | .30 |
| 7/4 | | 60 | 15 | | 0 | 4 | 2 | .28 |
| 7/5 | | 60 | 15 | | 0 | 2 | 3 | .22 |
| 7/6 | | 56 | 15 | | .08 | 4 | 4 | .20 |
| 7/7 | | 56 | 14 | | .30 | 4 | 4 | .20 |
| 7/8 | | 54 | 14 | | 1.45 | 4 | 4 | .24 |
| 7/9 | | 56 | 13 | | .25 | 4 | 4 | .38 |
| 7/10 | | 56 | 14 | | .24 | 4 | 4 | .38 |
| 7/11 | | 56 | 13 | | .36 | 4 | 4 | .36 |
| 7/12 | | 58 | 13 | | 0 | 4 | 4 | .36 |
| 7/13 | | 56 | 14 | | 0 | 4 | 4 | .32 |
| 7/14 | | 59 | 14 | | 0 | 2 | 2 | .30 |
| 7/15 | | 64 | 14 | | 0 | 2 | 2 | .28 |
| 7/16 | | 62 | 15 | | 0 | 4 | 4 | .20 |
| 7/17 | | 66 | 15 | | 0 | 3 | 2 | .20 |
| 7/18 | | 64 | 16 | | 0 | 2 | 4 | .18 |
| 7/19 | | 60 | 15 | | .02 | 2 | 3 | .16 |
| 7/20 | | 56 | 16 | | .20 | 4 | 4 | .14 |
| 7/21 | | 66 | 15 | | 0 | 4 | 2 | .12 |
| 7/22 | | 60 | 16 | | .30 | 2 | 4 | .10 |
| 7/23 | | 57 | 15 | | .60 | 4 | 4 | .12 |
| 7/24 | | 62 | 15 | | .02 | 2 | 2 | .10 |
| 7/25 | | 63 | 15 | | 0 | 2 | 2 | .10 |
| 7/26 | | 68 | 16 | | 0 | 2 | 2 | .10 |
| 7/27 | | 68 | 16 | | 0 | 2 | 1 | .08 |
| 7/28 | | 58 | 16 | | .25 | 2 | 4 | .06 |
| 7/29 | | 56 | 16 | | .05 | 4 | 4 | .02 |
| 7/30 | | 56 | 16 | | .09 | 4 | 3 | .02 |
| 7/31 | | 64 | 16 | | .01 | 3 | 4 | .02 |

(Continued)

Appendix Table D. (Continued)

| Date | Temperatures | | Water (C°) | | Percip. | Cloud Cover | | Water Gauge (Ft.) |
|------|--------------|------|------------|------|---------|-------------|------|-------------------|
| | Air (F°) | | 0900 | 2100 | 0900 | 0900 | 2100 | 0900 |
| | Min. | Max. | | | | | | |
| 8/1 | | 58 | 16 | | 0 | 4 | 4 | .0 |
| 8/2 | | 60 | 16 | | 0 | 4 | 3 | .0 |
| 8/3 | | 74 | 16 | | 0 | 1 | 1 | .0 |
| 8/4 | | 65 | 17 | | 1.6 | 4 | 4 | .0 |
| 8/5 | | 57 | 16 | | 2.4 | 4 | 4 | .01 |
| 8/6 | | 56 | 15 | | 0 | 4 | 4 | .38 |
| 8/7 | | 56 | 15 | | 1.4 | 4 | 4 | .38 |
| 8/8 | | 57 | 15 | | .29 | 4 | 4 | .46 |
| 8/9 | | 59 | 15 | | .03 | 4 | 3 | .46 |
| 8/10 | | 65 | 15 | | 0 | 3 | 2 | .46 |
| 8/11 | | 61 | 15 | | 0 | 3 | 3 | .38 |
| 8/12 | | 58 | 15 | | 0 | 4 | 4 | .32 |
| 8/13 | | 58 | 15 | | .30 | 4 | 4 | .30 |
| 8/14 | | 60 | 15 | | .04 | 4 | 2 | .24 |
| 8/15 | | 62 | 14 | | .30 | 1 | 4 | .22 |
| 8/16 | | 62 | 14 | | 0 | 1 | 4 | .26 |
| 8/17 | | 58 | 14 | | .15 | 4 | 4 | .20 |
| 8/18 | | 63 | 14 | | 0 | 1 | | .14 |
| 8/19 | | 65 | 14 | | 0 | | | .12 |
| 8/20 | | 60 | 14 | | .65 | | | .08 |
| 8/21 | | 56 | 14 | | .56 | | | .10 |
| 8/22 | | 54 | 14 | | .28 | | | .12 |
| 8/23 | | 54 | 14 | | | | | .12 |
| 8/24 | | 52 | 14 | | 1.55 | | | .12 |
| 8/25 | | 54 | 13 | | 1.55 | | | .40 |
| 8/26 | | 55 | 13 | | .21 | 4 | 2 | .42 |
| 8/27 | | 62 | 12 | | 0 | 1 | 1 | .42 |
| 8/28 | | 58 | 13 | | 0 | 3 | 2 | .40 |
| 8/29 | | 58 | 12 | | 0 | 3 | 3 | .36 |
| 8/30 | | 56 | 13 | | 0 | 4 | 4 | .32 |
| 8/31 | | 58 | 13 | | 0 | 4 | 4 | .28 |

Appendix Table E. Forecasted commercial salmon harvest by district and species, Prince William Sound, 1984.¹

| COMMERCIAL HARVEST (1,000's of fish) | | | | | |
|--------------------------------------|---------|-------------|-----------|-----------------------------|-----------------|
| District | King | Sockeye | Coho | Pink | All Species |
| Copper River | 25 - 35 | 600 - 800 | 150 - 250 | | 775 - 1,085 |
| Bering River | | 40 - 60 | 75 - 125 | | 115 - 185 |
| Coghill-Unakwik | | 70 - 110 | | 700 - 1,550 | 860 - 1,850 |
| Eshamy | | 15 - 25 | | 750 - 1,500 | 770 - 1,540 |
| General Purse Seine | | 50 - 100 | | 9,950 - 22,050 ² | 10,300 - 22,775 |
| Area Total | 25 - 35 | 775 - 1,095 | 225 - 375 | 11,400 - 25,100 | 12,820 - 27,435 |

¹ Harvest projections are only made for those species that normally constitute a significant portion of the harvest in those districts.

² Includes a projected harvest of 1.7 million sales fish from private non-profit hatcheries.